

HOW TO LIVE
—A—
HUNDRED YEARS

—BY—

GAY M. BRUNSON, M. S., M. D., D. D. S.



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HOW TO LIVE A HUNDRED YEARS

A Key to a Long and Healthy Life

— By —

GAY M. BRUNSON, M. S., M. D., D. D. S.



Published by the Author

Joliet, Illinois

1923

RA 776

B88

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PRESS OF
S. A. BREWSTER & SON
JOLIET, ILL.

DEC 31 '23

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no 1

To my only brother, Dr. E. E. Brunson, to whom I am indebted for many valuable suggestions derived from his long and successful experience as a practicing physician, this volume is gratefully dedicated by the author.

PREFACE

I am firmly convinced that one half of the sickness in the world could be removed by right living. I do not make this statement hastily, but only after years of study, research and experimentation not only by myself, but by many others.

Some years ago my health began to give way, and a complete breakdown stared me in the face. I tried medical treatment under various noted physicians, and while I occasionally noted a temporary improvement, I found that I was getting weaker.

I then began to study the works of some noted men in regard to proper diet. I adopted some of their methods, and soon saw that I was on the right track. I continued this study and soon found myself completely restored. Then I told my friends and patients, many of whom found the suggestions very helpful. I began to spread the gospel of right living and good health, speaking to clubs, societies and on the chautauqua course. Many have asked me if I had any literature on this subject, and it is because of this request that I have been induced to write this book.

I wish here to make a short quotation from the preface of that splendid work, "Old Age Deferred," by Arnold Lorand of Carlsbad, Austria. "Whoever takes up this book with the idea that the aged can be

transformed into sprightly adolescents will be disappointed. A work based entirely on evidence of a scientific nature, as is the present volume, cannot have such an end in view, since it is altogether unattainable, at least with the knowledge now available. But while it is still impossible for us to create a young man out of an old one, it is quite within the bounds of possibility, as we shall endeavor to demonstrate herein, to prolong our term of youthfulness by 10 to 20 years. In other words, we need no longer grow old at 40 or 50; we may live to the age of 90 or 100 years, instead of dying at 60 or 70.

“All this can be brought about by the observance of certain hygienic measures, and by improving the functions of a certain few of the glandular structures in our body, provided incurable organic disorders have not too gravely compromised one or more of our main organs.”

Dr. Lorand makes the above statement after many years of scientific research on how to prevent premature old age, in consultation with some of the writings of the most noted men in Europe.

It should induce every one to aid this cause of spreading the gospel of good health, when we know that a quarter of a million children in the United States of America die every year, before they have reached

ten years of age, on account of improper food, and unhealthy environment.

Not only are there a quarter of a million dying each year, but many times that number are handicapped by impaired health thru life, by improper living and eating food that has been deprived of its natural life giving mineral salts. Many young people at 20 or 25 years of age are not as strong or as well as they should be at 50.

In this short work I have endeavored to gather the conclusions and experiences from many noted writers and to accept only those conclusions that seem more or less prevalent among writers, and which conform to the experience of myself and my friends, but still more important those things which have been found to be true by successful practicing physicians who have devoted their lives to the study of these subjects.

I fully appreciate that my manner of presenting this subject may appear crude and radical, but I simply ask my reader to withhold judgment until he has read this book. I have already helped quite a large number of people to get back on the great highway of good health, and I shall feel amply repaid for my efforts if I can only reach a larger number of people. I want the parents of boys and girls to realize that the greater part of sickness among our young people,

aside from contagious diseases and injury, can be removed if they will only give their children the proper food and surroundings. Always remember that the stomach is not a playhouse, but a work room, and that it can use only what we supply.

For the benefit of those who might want to continue the study of these subjects further in detail than I could possibly go into in this small book, I will give a list of books and authors from whom I gathered a part of my information in the last chapter of this book.

I have a vision that if we could have an organization of these noted men and all the rest of my co-workers who are interested in spreading the gospel of good health, that we might, through the press and the pulpit, through all civic bodies and those individuals interested in health, reach far greater numbers. Where we now reach thousands we could then reach millions, and our living would be made an even greater blessing to our fellow men.

November, 1923. GAY M. BRUNSON.

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HOW TO LIVE A HUNDRED YEARS

CHAPTER I.

REMARKABLE EXAMPLES

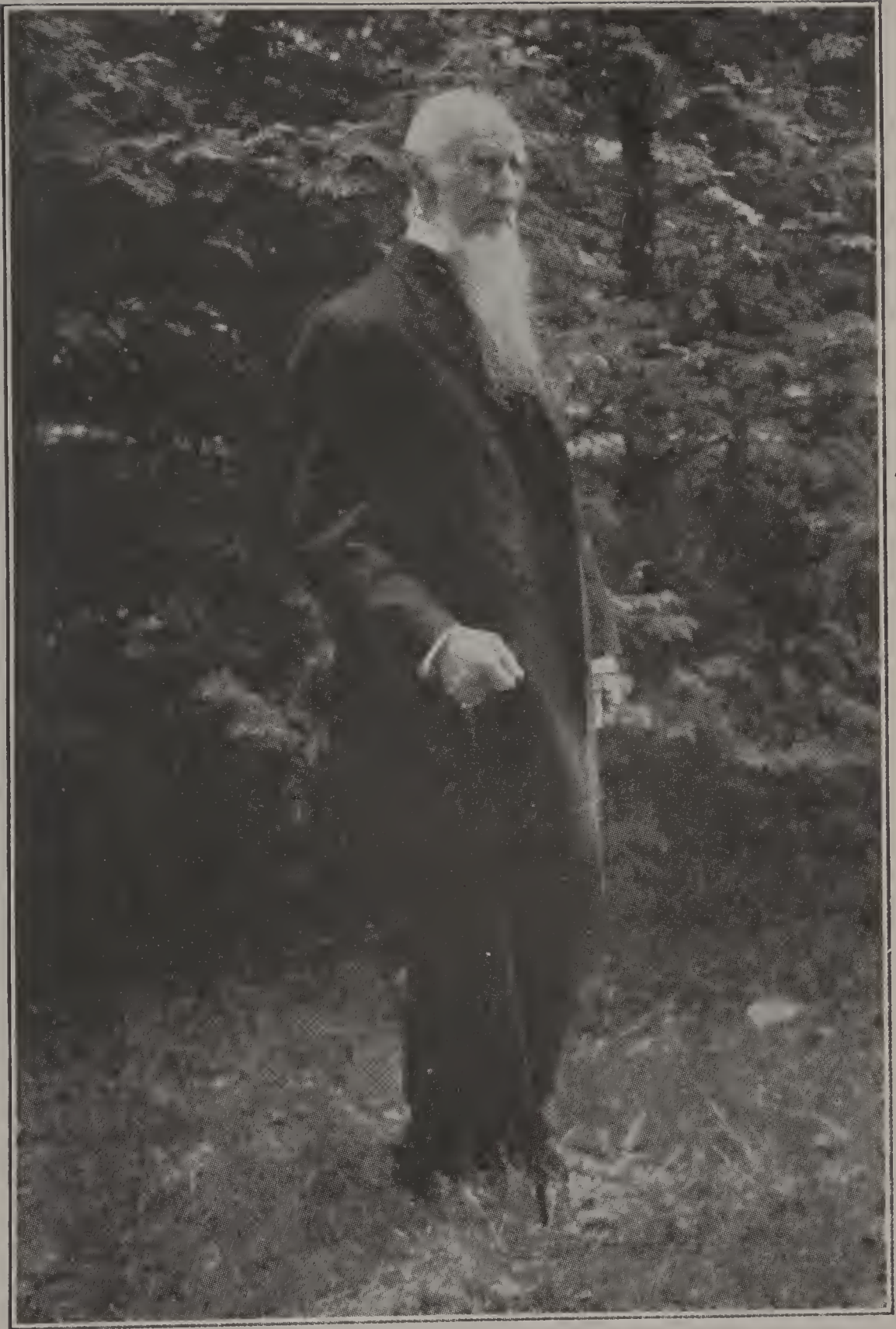
IN the first place it is possible to live a hundred years if we start right and bring up our children properly. Centenarians would then be the rule, not the exception as we now see it, caused by our habits of wrong living.

My father lived to be eighty-four and one half years of age, and my mother was past ninety-one when she died. I think it quite likely if my parents could have started with the knowledge of "right living" which we now have that they could have lived a hundred years.

In my home city of Joliet, Illinois, a man died last winter who was one hundred and three years old. At Dwight, Illinois, forty miles from Joliet a woman recently died after having celebrated her one hundred and tenth birthday. The pathetic thing about her life was that she had raised a family of three or four children, who grew up and died of old age at seventy or eighty years, before she passed away.

Rev. Seth Reed of Flint, Michigan, sometimes spoken of as Bay View's "Grand Old Man," reached the century mark this year, 1923. The reverend gentleman is a retired Methodist Minister who has been preaching for over 70 years. He is a wonderful example of what right living and a deep religious faith will do to prolong life. I often think of the good this man has accomplished in his long useful religious life. In June, 1923, at the age of one hundred years, Rev. Reed assisted in the Ypsilanti, Mich. centennial celebration. He was born the year the city was founded. His picture follows. Among other remarkable examples of longevity is that of Gurgun Douglas, born in Marstrand, Sweden, and who reached the age of 120 years and 7 months. He was married in his 85th year and had eight children, one of whom was born when he was 103 years old.

Luigi Cornaro, often styled "The Venetian Centenarian," the aged author of the famous treatise, "La Vita Sobria" (literal translation, "The Temperate Life," but better known as "The Art of Living Long,") was born in the City of Venice in the year 1464, and died in Padua in 1566, at the age of 102 years. He was of noble birth, a man of great personal and family pride. He was born with a delicate constitution, and unfortunately, an irritable disposition, and early in life he gave evidence of careless



REV. SETH REED

habits, which later developed into those of intemperance. Until he was 40 years of age he indulged in every kind of dissipation, and at that time he was almost a wreck. When he realized his condition he faced about, and by right living regained perfect health. To the end of his wonderful life he retained his health and vigor, and all of his faculties. At the age of 83 he wrote the first of the four discourses which constitute, "La Vita Sobria." This was followed by three others, one written at the age of 86, one at 91, and the last at 95.

That this world would be a most delightful place, if people would but live temperately, is the burden of his message to mankind. A simple diet was almost exclusively the nourishment of the oldest peoples of Egypt, Syria, and Greece in their most glorious days, that of the Romans.

When man shall once more take to heart this lesson of the means of enjoying uninterrupted health, and full length of days, the world will everywhere be blessed with the presence of those who will be considered in their prime at an age now scarcely believed attainable, and there will be no doubt that life is worth living.

Cornaro states in his book that he never realized what a beautiful world this is to live in until he had completely regained his health and at an advanced

age when most people would be sick and harassed with pain and all kinds of bodily ills and anxiously looking for death to end their earthly troubles.

This remarkable case of Cornaro but proves what wonderful results in the way of regaining health can be accomplished. Cornaro through dissipation was almost a physical wreck at forty years of age, but by proper diet, exercise, and mental conditions he completely regained his health with scarcely any medicine, and he lived for sixty-two years longer, making him one hundred and two years old. I refer to this remarkable case because it is very noted all over the world, to prove that people may live to be 100 years. If this result can be obtained with a man of Cornaro's age when almost a physical wreck, what wonderful results can we not expect if we start with a boy or girl and have them follow these great scientific methods of long living and usefulness.

Thomas Parr, an Englishman, was married for the third time when he was 120 years old and he died in his 153rd year. When he was 152 years old, the King of England invited him to come to London so that he might know this most interesting of his subjects—but Parr lived only 9 months at the Royal Palace. An autopsy was held by the celebrated Dr. Harvey, the discoverer of the circulation of the blood. Harvey found every organ in this wonderful old

man's body in perfect condition. His death was attributed to over-eating, as Parr had always lived a frugal life, milk forming quite a large part of his diet. The rich food he received at the Royal Palace did not prove beneficial to him, and altho 152 years of frugal life were unable to kill him, nine months of rich food succeeded in doing so.

Henry Jenkins, also an Englishman, lived to the age of 169 years. He lived very frugally and was always on friendly terms with nature. He was moderate in all things, his favorite drink was water, and it is said that he was never really ill until near the end of his life. He was not shriveled and shrunken, but a wholesome looking man. King Charles II. sent a carriage to bring Mr. Jenkins to London when he was one hundred and sixty-one years old. The old gentlemen declined to ride and walked the two hundred miles to the metropolis. The king questioned him regarding his life and desired to know the reason for his longevity. Jenkins replied that he had always been sober and temperate and that this was the reason for his many years. The Merry Monarch was neither sober nor temperate, and you may be sure that this reply did not please him. Mr. Jenkins was wiser than Mr. Parr had been, refusing to dissipate, even though he was old. Consequently he returned to his

home to enjoy life for nine years longer. These cases are authentic.

In all of the cases I have cited, these people have lived on good, wholesome food, and their habits of life have been plain and simple.

While the subject of this book is, "How to Live a Hundred Years," my message to you has a far deeper and more important object than simply to lengthen life, because lengthening life necessitates more care in diet and exercise and general observance of laws of health, and this means good vigorous health, so that we can do better work, and be of more service in the community in which we live. We can get so much more out of life if we are perfectly well; it is our own fault if we are not well, and if you will follow my suggestions carefully you can enjoy good health.

Did you ever stop to consider how few people are *perfectly well*? Perhaps not 1 in 20. There may not be so many hopelessly sick past recovery, but what a vast number are weak, sickly, nervous and run-down; people who are always ailing, complaining and doctoring without ever seeming to get any better. This vast population is below par, struggling to keep going, ever open to the attacks of all disease germs. They should change their habits of diet and exercise so that they can store up some surplus energy, and the

only way to do this is to avoid unhealthy, rich foods and eat good nourishing diet with proper exercise and observance of the Laws of Health and build up a good rich blood supply, one of the most precious things we ever have on earth.

I feel confident that the greater portion of this vast complaining population could regain perfect health if they would but faithfully follow the suggestions, rules and observance of the Laws of Health that can be found in this book. I have regained perfect health, in fact, I have never felt better in my life. I enjoy my food, I enjoy my work and I feel a zest and pleasure in living that has come to me through research and practicing the rules and regulations of life, which I feel it my duty to give to others. I have had the satisfaction of seeing many of my friends and acquaintances likewise restored to perfect health the same as I myself experience.

I am giving the main outlines and rules which each must work out for his own salvation, selecting the kind and amount of food and the amount of exercise that each individual system requires. Everyone can easily learn and follow up these different methods from which they derive the most benefit. This can be easily recognized by the increased strength, vigor and endurance, and splendid health which one can feel when following out the course that his special case

may require. So many physical disorders arise from incorrect habits of eating, that diet is a most important factor from the curative standpoint.

Aside from helping this vast number of people to get out of the mire of disease and to get back on the great paved highway of health, one great object that impels and spurs me on to write this book is to reach the parents and to prove to them, and teach them, the advantage and the necessity of right living, so that they can bring up their boys and girls to enjoy perfect health. Here is where the greatest good can be done.

I am firmly convinced that over one-half of the sickness in the world can be eliminated if we would but live right; and the best place to start is with our young people before any of their vital organs are injured or partially worn out and thus avoid pre-mature old age. If we start right and bring our children up properly there need scarcely be any sickness, with the possible exception of contagious diseases and accidental injuries.

I have had a wonderful opportunity to travel and study and to meet a great many people from whom I have gained many valuable experiences, and especially in talking with physicians who have had a wide and varied experience in fighting disease and death. I have learned many valuable facts, and I feel it my

duty to give these facts to the world and my efforts are to make this book the crowning event of my life.

If you will pardon the personal pronoun and citation of my experiences, I wish to say that I am a graduate of a literary, medical, and a dental school. I worked hard in college, and had a fairly good idea of how to live; proper food and exercise and general observance of the laws of health. In fact we might say that there is little hope of a man ever knowing anything, if he has not acquired some knowledge after this training.

However, I was not as strong as I should have been. I took more or less medicine all the time, but I grew worse, and a general break-down stared me in the face. I then thought that the trouble was in my lack of skill in diagnosing and treating my condition. I consulted some very noted and skilled physicians. Each of them was sure that he could cure me—diagnosing my weakness as due to various causes. In some cases there was a slight temporary improvement, but the ultimate result was that I was growing weaker.

I then began to read and study and investigate for myself. I soon discovered that I was on the right track. I took up the study from different angles. The government's great food expert, Dr. Wiley, had lectured in our town a number of years before.

It was a fine lecture, but I did not fully realize its importance until afterwards, but I did remember one thing that he had said about children. "Don't give your children candy, but give them Nature's sweets, prunes, dates, figs, raisins, grapes, and all kinds of fruit instead. Give your children proper food, a baked potato, whole wheat bread with butter and a glass of milk, and a diet along these lines, if you hope to bring up strong, healthy children." So I sent for Government bulletins. I did not wish to get a one-sided view of the thing, so I studied different authorities and compared them.

I began to incorporate these teachings in my own life and found they could stand the acid test of experience. I began to spread the gospel of good health and found it was a success with my friends and acquaintances, and it grew larger and I lectured more or less publicly to clubs, societies and on the chautauqua course and so many were continually asking me if I had any literature on this subject that I was led to write this book, and in so doing more efficiently spread the gospel of good health.

I have had an unusual opportunity to study this subject. My wife's health was such that we have spent twelve winters in warm climates; four in California, five in Florida, two in Arizona and one in San Antonio, Texas. I have traveled more than twice

around the world, which has given me an excellent chance to study this subject. For over thirty years I have conducted a large dental practice, with two assistants, so that business does not stop when I am away. Then I have always had an inquiring mind—my wife tells me I ask too many questions, and I guess she is right, she generally is.

I have adopted the divine injunction, "Seek and ye shall find, ask and ye shall receive, knock and it shall be opened unto you." This knowledge which I have obtained first hand from so many people I consider almost as valuable as the scientific knowledge I have gained from the great investigators, for it simply confirms their teachings. Over half the sickness of all the world can be eliminated, if we would only live right.

CHAPTER II.

FOODS AND A BALANCED RATION

THE most important message I bring you is the kinds of food to eat and the kinds to avoid. A good, rich blood current is the most valuable thing we can possess, and when we have this, together with a healthy body, we need have no fear of disease and sickness.

In order to maintain a high state of efficiency, and to enjoy perfect health and live to a ripe old age, I am going to place under five principal headings the things that are necessary to maintain this splendid physical condition.

1. FOODS
2. BEVERAGES
3. EXERCISE
4. MENTAL CONDITION
5. ELIMINATION

I consider food as by far the most important of these five great necessities. I can not place too great emphasis on the eating of proper foods, at the proper time, and in their proper amounts, and let me say right here that we must not eat too many kinds of

food at one meal. Often a well balanced meal that is desirable in every way, is ruined and made indigestible by the addition of a certain kind of food that should not be eaten at this particular meal. This is a great field that everyone must work out for himself. We get our varieties of food, and we must have a variety in order to get a well balance ration, but we should have different kinds and different classes of food at different meals. Great care should be taken in arranging for a meal to select those that are somewhat similar in their digestibility, or in other words, that require something near the same time for digestion. As an example it would be a very poor plan to eat boiled cabbage which requires about five hours for digestion, and at the same meal eat a baked apple which required only a little over an hour to be digested. The apple is very easily digested, but it is difficult for the stomach to rid itself of this until the other things which are eaten at the same time are digested. In the case of cabbage it would probably take five hours for the stomach to digest the cabbage and the apple which would still be retained in the stomach would be likely to ferment, causing serious digestive disturbances.

There is an old and very true saying that many people dig their graves with their teeth. I wish to state again the great importance of proper eating,

and these four rules which I quote from "Maintaining Health" by Dr. Alsaker, who so forcibly expresses them, should form a part of our vital knowledge. If you forget everything else in this book please remember them, and try to put them into practice.

1. EAT ONLY WHEN HUNGRY
2. DURING ACUTE ILLNESS, FAST
3. BE MODERATE IN YOUR EATING
4. THOROUGHLY MASTICATE ALL FOOD

Frequently throughout this book I will use the term, "a well balanced ration," and I will explain just what this means. Briefly, it is a scientific selection of the foods which we should eat, and which contain the three principal elements of food, protein, fats, and carbohydrates and which also supply the valuable mineral salts and vitamins which are so necessary to the human system. Leading food authorities, with few exceptions, are agreed that the balanced ration should consist of 1-10th protein, 3-10ths fat, and 6-10ths carbohydrates.

CHAPTER III.

PROTEIN

WE will first discuss the proteins, which although only 1-10 of the balanced ration, perform a very important part in sustaining life and keeping our health up to a high standard. These foods are called the building up foods, or the tissue builders, and are absolutely necessary for nutrition. While they are absolutely necessary for our very life and existence, great care should be observed in not eating too freely of the protein foods, for the reason that the protein in these foods cannot be stored up in the body, and whatever protein is not needed for immediate use in the human system must be immediately eliminated, and thereby an over burden of work is thrown on the excretory organs. Protein foods are obtained from two general sources, animal and vegetable. After we take up these protein foods separately, we will discuss a reasonable way in which to determine the correct amount to be eaten. We need more of this class of foods in the winter, than we do in the summer, to furnish the fuel to keep the body heat. Meats are

considered the leading protein food as usually consumed by the American people.

There is considerable diversity of opinion among food authorities upon the eating of meat. One school claims that no meat should be eaten at all. Another school claims that it should be the principal part of a diet. Between these two extremes, my opinion is, that with those with whom meat agrees, it should be used once a day, very sparingly. Some very noted authorities declare that we should eat no meat but that we should substitute nuts and other protein foods. This is not practicable at present for the simple reason that there are not enough nuts in the United States to last one day if everybody depended upon nuts for their supply of protein, and until we can have some suitable substitute for the protein contained in meat it would not be wise to stop its use at once, but I can not condemn in too strong language the excessive use of meats.

Its use is causing a tremendous amount of sickness, disease, and premature old age. It is one of the greatest factors in bringing on rheumatism, Bright's Disease, high blood pressure, and Arterio Sclerosis, or hardening of the arteries. A very important thing about eating meat is this, good fresh meat properly cooked is quite easily digested by a healthy person, and furnishes excellent protein in the

form of nutrition or tissue builder, but the great danger lies in the immediate elimination of this meat. If a person is troubled with constipation there is a great source of danger and a breeding field in the colon for the development of the most malignant bacteria that increase by the million in an incredibly short time. These bacteria are soon absorbed in the blood stream and pass to all parts of the body, causing auto intoxication, and seriously interfering with the harmonious functioning of all vital organs of the body.

Meats should be strictly fresh when used. After meat is slightly tainted and decomposition has actually started it is absolutely unfit to be taken into the human system. Fresh meats have a much sweeter taste which gradually disappears in two or three weeks after being slaughtered

In my work and study along these lines I have become very much opposed to the use of cold storage meats or as some writers put it "embalmed meats." Expert scientists have discovered that samples of meat taken from cold storage where they have been kept for months or years, contain a much higher bacterial count than can be found in fresh slaughtered meat. Still more dangerous than this is the condition which this meat has reached, so that when it is taken from cold storage by the retailer, and served to

the consumer, a much more rapid deterioration takes place than in fresh meats. I am satisfied that in these facts can be found a quite important reason for the harm that meats are doing to the American people. Fresh killed meats are much sweeter than cold storage meats, and the longer they stay in cold storage, the more tasteless and dangerous they become. Not only will the above objections hold for cold storage meats, but even more dangerous are the practices which are resorted to preserve meats. Many harmful chemicals are used to keep the meats from spoiling, and these are a serious injury to the people who consume them. Formaldehyde and benzote of soda are among the most commonly used preservatives. The meat industry is one of the largest in the United States and its products are a principal part of our diet, and it is for this reason that I have given so much space to the discussion of meats. It should be distinctly understood, however, that we can reach ripe healthy old age without using meat at all.

In eliminating the waste from the meat we eat, we must also eliminate the waste matter that was in the animal's system when slaughtered, and this creates extra work for the excretory organs, especially the kidneys.

There is a great diversity of opinion in regard to what are the best kinds of meats. I consider lamb and

beef among the best meats. Pork is not considered as healthful as either of the above and yet I consider it not altogether dangerous to eat fresh killed pork occasionally. Veal and pork are considered harder to digest than beef and lamb, taking about five hours to digest.

All meats should be thoroughly cooked so that they are very tender and more easily masticated and digested perfectly. Meat in a pot roast or baked is healthier to eat than when fried. Although, if fried carefully and scientifically in a very hot spider or griddle, so that the surface of the meat is seered to retain the juices, and then cooked more slowly until thoroughly done, it is much better than when fried in grease. The fireless cooker is also an excellent way in which to cook meat. Frequently the cheaper cuts of meat are fully as nutritious when prepared in this manner as the higher priced meats. All the natural juices are retained, and it is much more tender and better flavored. Some of our latest improved gas ranges now have a hood that is placed over the kettle in which meat is being roasted. After the meat has stood over the fire for ten or fifteen minutes the gas is turned out, and this hood retains the heat for hours afterwards, much on the same principle as the fireless cooker. The National Pressure cooker in which quite a high temperature, about 300° Fahrenheit, is at-

tained by a steam tight cover, is another excellent manner in which to cook meat and vegetables. It is this principle of cooking at high temperatures, 300° or more, that salmon and other forms of fish are thoroughly cooked so that we can eat the bones the same as flesh.

Hence my caution is that meats should be eaten very sparingly, not more than once a day, and with the other proper foods to be taken with them, so that there is prompt elimination of the waste and ashes, at least twice a day to prevent the meat from remaining in the colon as a breeding place for over twelve hours at a time. This is not only a very important point in regard to eating meat, but it is a great universal law that applies more or less forcibly to all kinds of food. As we get older we should eat less and less meat. Some authorities claim that very little meat should be eaten by a person over fifty years of age. After this age I think that meat eaten every other day, or two or three times a week, is ample and some people are much better off if they do not eat meat at all after they are fifty or sixty years old.

Strictly fresh fish supplies protein in a very good form, and when properly prepared, and eaten in moderate quantities, forms a very nourishing food.

Egg should form an important part of our diet, as they are nourishing, easily digested, and contain

many important food elements. The white is composed largely of albumen. The yolk, however, contains the vital elements, the vitamins and mineral salts, especially iron. Beaten up raw, soft boiled, or poached they are the easiest digested. As ordinarily fried, eggs are most difficult of digestion, part of their nutrition being lost in frying.

In milk we find a large amount of protein, and in a very digestible form. Milk is almost indispensable, especially for the young. It is a perfect food. Butter and cream are the best forms in which to obtain the ounce and a half of fat which the human system requires daily. In addition to its internal secretions, valuable ferments and mineral matters, milk is an ideal form of nourishment, owing to the fact that it contains all of the necessary elements of human food.

It is the most nourishing of food. Good cows milk contains 35 grams of albumen, 40 grams of milk-sugar and 35 to 40 grams of fat to the liter. McCollum advises each person to take a quart of milk a day, combining that taken raw and in cooking. According to our present habits, the consumption is only one-half pint daily—one-fourth the amount that should be used by the people of this country. An excellent plan is to use a little cream on your breakfast food instead of sugar. There is health and long life in the use of milk and cream. Use them freely.

Butter-milk is considered very healthful if it can be obtained while fresh, soon after the butter has been churned. It can be made at home from fresh milk by adding commercial tablets prepared by the leading pharmaceutical manufacturers. These tablets contain the "Bacillus Bulgaris," a friendly germ, which causes the milk to turn to butter-milk. These bacilli are the most valuable part of butter-milk as they manufacture lactic acid in the human intestinal tract, especially in the colon, and make a medium in which it is very difficult for the dangerous forms of bacteria from meats and other protein foods to exist.

There is a great variety of opinion among food experts in regard to cheese as a food. The majority claim that a good fresh cream cheese is a healthful food, while others claim that it should not be used as a food, that it is decomposed milk. The majority of them are agreed, however, that if cheese has aged so that it is sometimes spoken of as being "ripe" and in advanced bacterial fermentation, it is not in this stage of decomposition a very healthful food. Some authorities claim that good cheese in very small quantities is an aid to digestion. Cottage cheese is an excellent food, easily digested and is generally made from sour skimmed milk. Some fats can or should be added, in the form of butter or cream, to make it more palatable and nourishing.

Among the vegetables which furnish a considerable portion of protein, I would give an important place to beans, which are next in value to meat and which are a most useful part of a healthful diet. We also find protein in corn, peas, lentels, and other legumes, such as peanuts. Carrots are rich in the salts of iron, and spinach, which has a high percentage of iron, is sometimes called the "human broom," sweeping the waste from the system. Nearly all vegetables in their season are valuable foods. Onions, boiled, should be eaten once or twice a week.

Nuts are very rich in protein, and also an excellent substitute for meat. If thoroughly masticated nuts are quite as digestible as meat. They also supply fat and other essential elements. I consider English walnuts, almonds and pecans among the most easily digested and nourishing foods. When eaten with seedless raisins, which give a delightful flavor, they make an excellent desert instead of pie or rich pasteries.

Wheat, when properly milled, is a great source of protein. Our present system of milling is faulty and this subject will be taken up more thoroughly under the chapter on "Carbohydrates."

Most authorities recommend about 1-10 of our menus should be protein. But at least one half of this protein should come from the vegetable kingdom.

Therefore, we must remember not over 1-20 of our calories of protein should come from the animal kingdom, and that we can live long, healthy, active lives, and perform heavy, manual labor without meat, if we would but learn to use vegetables, cereals and nuts, rich in protein, so as to maintain a balanced ration.

CHAPTER IV.

FATS

FATS should form about 3-10 of a balanced ration.

These foods form a very important part of our diet. In proportion to their weight the fats produce far more heat than do carbohydrates. Therefore, this class of food should be used far more freely in winter than in summer. We see why in the frigid Arctic regions the Eskimos and natives exist almost entirely upon fat during the winter, but if we examine the foods in the tropics, we find an entirely different condition. There Nature provides scarcely any fats, but instead the normal diet consists of large quantities and great varieties of fruits and vegetables.

The maintaining of the bodily heat and energy is one of the most important functions of food, but great care should be exercised that we select those foods that are best suited to our needs, and the ashes and waste of which, after they are used, can be easily eliminated from the human body without special effort or energy.

By far the most healthful and easily digested fats are obtained from butter, milk, cream, cheese and nuts.

Fats are also found to a considerable extent in some fruits and vegetables. Some maintain that oleomargarine is more healthful than butter, but personally I prefer the butter. Among vegetable fats and oils are many different kinds such as olive oil, cocoanut oil, peanut oil, maize oil and many others. We have spoken before of the value of nuts under proteins as they also furnish a splendid form of protein.

Many people contend that nuts are indigestible. This may be true when they are eaten at the close of a very hearty meal which comprises too great a quantity of protein, but if they are eaten with the right kinds of foods which have been used sparingly, people will find very little difficulty in digesting them.

CHAPTER V.

CARBOHYDRATES

CARBOHYDRATES should furnish 6-10 of the well balanced ration. Over half of our foods will come under this heading. The main functions of these foods is to furnish the body with heat and energy, and the different elements of nutrition that the body requires. Great care should be exercised in selecting our diet from these two great sources of food. The main thought should be to select those articles of food which can be digested and assimilated with the least effort of the body, and the waste eliminated without injury to any of the vital organs. We should also be guided in choice of these foods to select those foods which do not cause fermentation.

Carbohydrates is a general term that includes the starches, sugars, and celluloses, and these will be taken up in their order.

Grain stands at the head of all foods to give us a long and healthy life without injury to our digestive system, and wheat leads them all. We should do away with baker's white bread in our dietary, and

substitute whole wheat, graham, and rye bread instead.

“Give us this day our daily bread,” is the only material thing we are taught to ask for in the Lord’s Prayer; but this was a real bread referred to in biblical times, and not the poor substitute of the modern baker’s bread which the people are now using.

In this kernel of wheat the Lord gave us a perfect food—first the thin outer shell of bran, the best laxative known. Then comes the gluten, vitamins, and precious mineral salts, all these precious things so necessary to life. *The best and most nutritious parts of the grain are bolted out, and given to the cattle and hogs in the form of bran, shorts, and middlings, and we have only the starch left, ground to powder, which causes constipation with all its attendant evils of disease and broken down health.*

For some time we bought whole-wheat and graham flour, and used it with ordinary commercial flour in making bread. This was a great improvement over using the white flour alone, but I knew some of the best part of the grain had been removed in the process of milling, so I decided to buy a family grist mill and do my own grinding. After looking over the various kinds, I bought a mill made in my home city, Joliet, Illinois, by Humphrey & Sons. I have been using this mill for almost five years now, and it has

been very satisfactory. One mill would do for the use of two, three, or half a dozen families. The price of the mill is eight dollars, or nine dollars if it is supplied with an additional balance wheel so that it can be belted to an electric or gasoline engine. This mill is well made and can be used to grind wheat for your own breakfast food, as well as for grinding chicken feed. I am not trying to sell this mill, however. I bought it because I thought it was the best I had seen. The large mail order houses, and other concerns, sell mills for this purpose, some even use a coffee mill, but it does the work imperfectly.

I buy my wheat at threshing time, when it is fresh and clean. The spring wheat should be used for bread, as it is richer in gluten and more healthful, while the winter wheat is better for pasteries. It can be placed on a shelf, suspended by wires from the ceiling of the attic, and in this way it will keep fresh for years, and safe from mice. Whole wheat flour will not keep as well in hot weather as ordinary flour, because of the gluten it contains. I grind it only as I need it. In ten or fifteen minutes I can grind sufficient wheat to make a baking, when mixed with white flour. Three and a quarter bushels of wheat make a barrel of flour, at a cost of less than four dollars,—two cents a pound—more than a year's supply, when added to the white flour. A loaf of this bread has

more tissue building and life sustaining power than two loaves of baker's bread.

I wish someone had told me fifteen years ago what I am telling you now. It would have saved me so many discouraging years. I did not know how to grind the wheat; I did not know that it was practicable. I was not sure that it was palatable and healthful, and I thought that the milling trust had to take a hand in it, before it was fit for use.

Rye flour is almost the equal of wheat and very similar in its constituents. Some people object to the sticky consistency of rye-bread, but this can be overcome by mixing with the flour an equal quantity of white and whole wheat flour. Corn meal is very healthful and should be used to give variety to our menu, especially in cold weather.

Rice in its natural state is a very healthful food, and should be used freely in our regular diet. Its main food element is starch, and it is in an easily digested form. We find the same serious objection, however, in the ordinary rice on the market today, that we find in our commercial white flour. The rice on the market has been polished, and the outer brownish coat, which contains the mineral salts and some of the most vital elements of food, has been removed in the same manner that our great milling concerns are robbing the American people of the vita-

mines and mineral salts contained in the other grains.

We should use rice in its natural brown form and this can be obtained from any of our large mail order houses and most groceries if we insist on it. This form of rice is usually put up in small packages, as it does not keep quite as well as polished rice, because the oily fats and mineral matters contained in the rice grains will not keep as well, especially in warm weather. For this reason our manufacturers try to discourage the people who wish to use the natural brown rice and the whole wheat flour because these precious foods in this form can not be kept as long, or in such large quantities, as the polished rice and the white bleached flour.

Tapioca is another form of starch and is largely used in making deserts.

VEGETABLES

Vegetables are very healthful and should enter largely into our diet. The leafy vegetables have different food elements from the root vegetables, and are usually very much neglected in the diet of the average person, although they are very rich in vitamins and mineral salts, and at least one of these leafy vegetables should be eaten every day.

I would place the potato as the most valuable vegetable. It can be obtained throughout the entire

year, and is best when baked and eaten with the skin on. If it is not convenient to bake potatoes, they should *be boiled with the skins on, peeling them afterwards*, so as to *preserve the precious mineral salts* just under the skin. The starch in potatoes is slightly easier to digest than the starch in bread, and contains other valuable mineral properties.

McCollum advises eating raw cabbage three times a week in the form of salad or cole slaw. Sauerkraut, eaten without cooking, is a most healthful form in which to eat cabbage. It contains an abundance of all four vitamins, it is rich in mineral salts, especially iron and calcium, and is very rich in lactic acid. Dr. Brokaw of St. Louis, Missouri, calls sauerkraut the "human vacuum cleaner." Dr. Arnold Lorand of Carlsbad, in his book, "Health and Longevity Through Rational Diet," speaks of some very excellent results obtained by the use of one or two tablespoons of sauerkraut eaten at the beginning of a meal.

Tomatoes are a very important vegetable, and when eaten raw help to supply the needed vitamins and mineral salts. Tomato juice is very often given to babies for this reason, when orange juice is not available. Since tomatoes cook in their own juice they lose but very little of their important food elements in cooking.

Among the leafy vegetables we might enumerate lettuce, radishes, celery, garden cress, green onions, (to those who can use them) and raw cabbage and tomatoes, which have been discussed. All of these should be eaten freely while in season. They give bulk to food in the alimentary tract, aid peristaltic action of the bowels, and help to prevent constipation.

FRUIT

Most people do not use enough fruit. It should form a very important part of our diet. Among the many kinds of fruit I would place the apple as the most valuable, available the year round. "An apple a day keeps the doctor away." If it is possible it is best not to select those which are too sour, a Jonathan, a Wine Sap, or a Northern Spy, being preferred. A baked apple is one of the easiest digested foods, and can be taken with milk. Oranges come next. The juice of a ripe, sweet orange is very rich in mineral salts and vitamins and is *very healthful*. It is now given to babies, between feedings of milk, with great success. Grapes come next. The California white grape is a typical case of perfect natural sweets, and is taken into the system as levulose, with few changes and no digestive disturbances. The Concord grape is a life-saver, we should can more grapes and make more grape juice. Peaches, pears, plum, berries, and

most of the other fruits are healthful and should be eaten freely when in season.

SUGAR

There are over two hundred different kinds of sugar, the most common or most important of these being Cane Sugar, Milk Sugar and Grape Sugar.

If I were to prepare a list of the things which were not to be eaten, I would place at the head of this list as the most dangerous, candy and rich cake and pasteries—nothing will put you out of business and break down your health any surer than to eat freely of candy and rich cake and pastries.

The human stomach can not digest candy and cane sugar. It is not acted upon by a digestive enzyme until it passes through the stomach and reaches the small intestine. Before it reaches this stage, however, it has caused lots of mischief. It has usually fermented and soured in the stomach, causing gas and distress, and seriously interfered with the digestion in the stomach, and the desire for nourishing food.

This fermentation causes more or less sour acid condition of the entire alimentary tract, and when it is absorbed it disturbs the harmony of the whole system, throwing excessive work on the kidneys and the pancreas, in filtering out these conditions, so as

to keep the blood slightly alkaline. Then extra work is thrown on the liver, which stores up sugar to be doled out to the human system as needed. The malt sugar, manufactured by the action of the saliva on starches, is the best kind and is easily handled by the liver.

The people of the United States eat far too much sugar—ninety pounds per capita—twice the amount any other Nation eats—and that is one main reason why we are a Nation of dyspeptics.

Even those who advocate eating candy admit it should be eaten only in very small quantities at the close of dinner, never between meals. A very noted physician allowed one small piece of candy to a patient's son at the close of dinner.

The foregoing severe indictment is against pure candy and cane sugar. There is, as a matter of fact, very little pure candy. Glucose and other things, with cheap dangerous coloring matter enters largely into the manufacture of most candy today.

Glucose is made by boiling sulphuric acid and corn together and is a powerful irritant to the kidneys and liver, when taken in any appreciable quantity, causing nephritis or inflammation of the kidneys. Corn at fifty cents per bushel, and sulphuric acid cheap, glucose can be manufactured for one-third the cost of

sugar, and it is sweet and can not be easily detected when mixed with sugar and other ingredients.

With this knowledge before us, can you wonder that I ask you to help me spread the gospel of good health, and warn parents against giving their children candy. If children eat freely of candy when young, they will never become strong men and women. If their digestion is so strong as not to be impaired, it will show later in life, in high blood pressure, kidney, liver and heart trouble, or in some other form of break-down in what should be middle life, bringing on pre-mature old age. It is in these rare cases, that do not show the bad effects of eating candy until later, that makes it so much more dangerous.

Undoubtedly there is still an occasional incredulous reader. To all of them I will say: "Try it yourself." Eat freely of candy between meals, or at bedtime. Notice the "Prince-Albert" taste in your mouth next morning, little desire to eat a normal meal of wholesome food, that tired languid feeling, and many other symptoms of headache and disturbed digestion.

Watch the effect of candy on children—sometimes with an exceptionally strong and healthy child it may take a day or two to be noticed, but usually the ill effects can be seen at once in lack of appetite at the following meal, pale, languid, tired expression, con-

trary, irritable mental condition, all of which is due to excessive fermented poisons in the child's system that could not be eliminated.

A noted New York physician recently stated that after reviewing some statistics he found that the number of people in this country afflicted with diabetes had doubled in the last few years. This increase dates from the time prohibition went into effect, and he laid this to the enormous increase in the consumption of candy and cane sugar by the American people.

Formerly there were about 1,000,000 people afflicted with diabetes, but since the Volsted Act has been in effect this number has increased to 2,000,000 people.

The more cane sugar and the more candy people eat the more they want to eat, causing an unnatural craving, very much as the alcoholic feels, for the more alcohol he consumes the more he wants to consume, creating an abnormal appetite. Because cane sugar is an irritant to mucous membranes; it causes a catarrhal condition and an abnormal appetite for more and more. Just as alcohol never satisfies, it always wants more and more.

CHAPTER VI.

VITAMINES AND MENUS

I WISH to make a short quotation from the noted food authority, Dr. Harvey Wiley, of Washington, D. C., on the growing interest and necessity of vitamins in our food. The doctor puts this in a very forcible manner, and from a man in his high position, it adds weight to the report he makes :

“An increasing interest on the subject of vitamins is being shown by the public, while the number of chemists and physiologists engaged in research work, is rapidly increasing. It would be idle to attempt to tell the public what vitamins are, since this important question remains unanswered, as they have never been isolated.

“The general impression is that a vitamin is some actual particle of matter, and therefore, a definite chemical unit, which attaches itself to food, at least to some foods, in a perfectly natural and physical manner. The absence of vitamins from food produces certain disturbances of biological functions, and in the end results in disease and death. Since it has been demonstrated that food products devoid of

vitamines are incapable of digestion and assimilation by the human body, the practical importance of exact knowledge relating to vitamins can no longer be denied. The lack of vitamins manifests itself in several ways. First, a distinct and easily recognizable disease follows the use of certain vitamin-free foods. This disease which was first noticed in the Orient, was called beri beri. It is now generally designated under the name of polyneuritis. It is a progressive paralysis of the nervous system attended with various other disorders of the body, resulting in coma and death. An affection of the eye known as "dry-eye" has been noticed, as the result of the absence of certain vitamins in the food." Scurvy is another result, and some investigators have also found rickets associated with a deficiency of vitamins. Vitamins are divided into three classes, A, B and C. The A vitamin is said to be soluble in fat, while the B and C vitamins are said to be soluble in water. These are not really accurate descriptive terms. The B vitamin is also soluble in fat and the A vitamin exists particularly in those parts of the plants where there is the least fat—in the leaves of the vegetables and plants, particularly of alfalfa, clover, lettuce, cabbage and etc."

The following table shows the distribution of the vitamins, A, B, and C, in the more commonly

used foods. It is taken from data compiled by Professor Eddy of Teacher's College, Columbia University and published in his book the "Vitamines Manual," in which the British and American data have been combined giving us the highest authorities on this subject to date. A few additions have been made. xxxxx is very plentiful; xxx abundant; xx relatively large; x present in small quantities; 0 absent.

	A	B	C
Spinach	xxx	xxx	xxx
Cabbage (raw)	xxx	xxx	xxxxx
Carrots	xxx	xxx	xx
Cauliflower	xx	xxx	xx
Lettuce	xx	xx	xxxxx
Onions	0	xxx	xxx
Parsnips	xx	xxx	0
Peas (fresh)	x	xx	xxx
Potatoes	0	xxx	xx
Sweet Potatoes	xxx	xx	0
Cereals	x	xxx	0
Bread (white flour)	0	Trace	0
Bread (whole wheat) . .	x	xxx	Trace
Rice (polished)	0	0	0
Rice (unpolished)	x	xxx	0
Butter	xxxxx	0	0
Cod liver oil	xxxxx	0	0

	A	B	C
Egg Yolk Fat	xxxx	0	0
Milk	xxx	xxx	xx
Cheese	xx	x	0
Condensed Milk	xx	x	0
Cream	xxx	x	Trace
Brewer's Yeast	0	xxxx	0
Yeast Cakes	0	xx	0
Yeast Extract	0	xxxx	0
Brains	xx	xxx	x?
Herring and Salmon	xx	xx	?
Lean Meat	x	x	x
Liver	x	x	?
Canned Meats	?	0	0
Oats	x	xxx	0
Rye	x	xxx	0
Beans (kidney)		xxx	
Beans (navy)		xxx	
Flaxseed	xx	xxx	
Apples		xx	xx
Bananas	?	x	xx
Grapefruit		xxx	xxx
Lemons	0	xxx	xxxx
Limes		xx	xx
Oranges		xxx	xxxx
Tomatoes	xx	xxx	xxxx
Tomatoes (canned)			xxx

	A	B	C
Almonds	x	xxx	
Brazil nuts		xxxx	
Chestnuts		xxx	
Cocoanuts	xx	xxx	
English Walnuts		xxx	
Eggs	xxxx	xx	0
Honey		xx	0

A Vitamine is a catalyzer. It makes other things go on, or makes other things work, such as iron turns plants green. Vitamines are closely associated with mineral salts. There are mineral salts in all nourishing foods. If we eat foods rich in vitamines, we may rest assured that they are accompanied by plenty of the precious mineral salts which are absolutely essential to digestion and good health.

EXPLANATION OF THE ABOVE TABLE

“It is impossible to give the exact percentage of vitamines in different foods, but the above table should serve as a very valuable aid to us in selecting the foods which are most abundantly supplied with vitamines. As a matter of convenience I would divide the foregoing table into five classes.

1. Foods which produce disease by their lack of vitamines and which should be taken very sparingly. We will designate these by “0”

2. In the second class I would include foods which if eaten for any length of time cause disease by reason of an insufficiency of vitamins. These are marked "x"

3. In the third class I would place foods which are healthful and which do not induce disease. If one is suffering from a lack of vitamins, foods in this class would help to restore him to a healthy condition and I would designate this class of food by "xx". This class of food might be said to be healthful food.

4. In my fourth class I would place all foods which produce a prompt removal of established vitamin deficiency diseases and I would designate them as "xxx."

5. In my fifth class, which are marked "xxxx" are those foods which exert a most powerful influence in restoring the body to a healthful condition when suffering from vitamin deficiency due to improper diet."

I cannot emphasize too strongly the vital importance of the foregoing table of foods. We should study this table repeatedly so that we become really familiar with the foods which contain two, three, or four plusses and try to make them the principal part of our diet if we want to build up strong, robust constitutions, free from pain, disease, and premature old

age. These vitamins are closely associated with the precious salts which are absolutely essential to the proper digestion and assimilation of food.

To explain more fully to my readers what the foregoing table means, I would add that "A" vitamin is said to be soluble in fat and is absolutely essential to children as it contains the growth factor and helps the child to mature properly. The "B" vitamin is soluble in water and protects us against beri-beri, and poly-neuritis, which as the name implies, starts with an inflammation of the nerves and if wrong diet is continued it eventually leads to complete paralysis and death. I might add that "C" vitamin is also soluble in water and protects us against scurvy. It is now generally recognized that there is a fourth vitamin "D", which is soluble in fat, and which is a great aid in preventing rickets or in curing them if already acquired. Cod liver oil is very rich in this vitamin "D", and it also contains vitamin "A" in large quantities. In some localities in crowded parts of large cities it has been found that rickets among children have developed very rapidly. It is said that this is often due to the food insufficiency or lack of food containing "D" vitamin and other vitamins. It has been found that babies artificially fed, especially those fed upon condensed milk, are very liable to develop this disease, unless food rich in vitamins,

such as orange juice or tomato juice, is supplied them. It is now claimed by some writers that a fifth vitamine, "E", has been discovered, but this fact is not fully acknowledged by the leading authorities as it has not been fully established.

In studying the above chart I would call your attention to spinach, cabbage, carrots, cauliflower, and lettuce which are abundantly supplied with all three of the vitamins. If possible one or more of these vegetables should be included in every daily menu.

All forms of yeast are rich in vitamins. I know many people who have greatly improved their health by taking a yeast cake or part of a yeast cake after each meal. Sometimes one yeast cake after supper or at bed time is sufficient to furnish the vitamine content and at the same time acts as a laxative assisting the elimination of the waste in the bowels. The amount and time of taking can be best determined by each individual need.

I would also call your attention to white bread which is absolutely devoid of vitamins and which shows and proves why we should substitute the whole wheat bread for the white bread, because it is rich in vitamins. We should also discard polished rice which contains no trace of vitamins or mineral salt and we should substitute the unpolished rice which is quite rich in vitamins. These few important foods

are of the very greatest importance to our life and health. Potatoes, both Irish and the sweet variety, are rich in vitamins. Then look at canned meats, also devoid of vitamins. Now look at pastries, candies, and other forms of cane sugar—absolutely devoid of vitamins.

Study this table carefully, follow its suggestions and get back onto the great highway of health. It is plain, it is practical, it is simple, and yet it comes from the highest authorities in the world and is worthy of your most careful consideration, for in it is contained the key to health and happiness.

MENUS

One of the good plans that has been proposed for omnivorous people is that which has been worked out by Dr. J. H. Tilden. Its skeleton is, fruit once a day, starchy food once a day, flesh or other protein with succulent vegetables once a day. Following are some menus based on this plan.

BREAKFAST: Baked apples, glass of milk.

LUNCH: Boiled rice with butter.

DINNER: Roast mutton, spinach and carrots, salad of raw vegetables.

BREAKFAST: Cantaloupe.

LUNCH: Biscuits or toast with butter, glass of buttermilk.

DINNER: Pecans, two stewed succulent vegetables, salad of lettuce, tomatoes and cucumbers, (dressing.)

Eugene Christian has been quite a noted writer on health subjects for a number of years. Fifteen or twenty years ago he advocated eating more raw foods in their natural state. At that time, we knew little or nothing about vitamins or the precious mineral salts, and yet he found in his experience and study and research that these foods in their natural condition were essential to a long, healthy life. The wonderful discoveries that have been made in the last few years but confirmed his judgment, and now we have the reason why foods of this kind that are rich in the vitamins and mineral salts are so essential to our health.

A striking and almost startling example of what food, deprived of these vital elements will do to break down our health is shown in the form of a story of the German raider, Crown Prince Wilhelm, which follows in Chapter VII.

I would ask my readers to read this incident very carefully and see what improper food will do in 255 days to break down the health of five hundred strong, sturdy German sailors, and yet the foods they lived upon and captured from the ships they sank, are the principal foods of the Americans today.

I will give a few menus taken from Dr. Christian's latest works, "Ten Little Lessons on Vitamines."

These are selected from a number of sources that appear to me the best in giving these menus as an outline from which my readers may select and formulate a diet that is especially suited to their needs. I wish to make this book a key to a long, healthy life, and if my reader will please study it carefully and adapt such portions as are best suited to his needs, I think he will find a great benefit in increased health.

These menus are simply outlines that can be varied, added to or subtracted from, as the needs of the individual cases may arise and let me add right here, do not be discouraged in trying once or twice. It takes time to develop and formulate a series of foods and menus that are best adapted to each of our individual needs.

BREAKFAST:

Cereal - - - Cream or butter,
One Egg, or very ripe banana with cream,
Glass of rich milk,

LUNCHEON:

Glass of buttermilk,
Baked potato,
Poached Egg,
Celery, ripe olives and nuts,
Wafers.

DINNER:

Clear soup,	Lettuce or slaw,
Broiled fish,	Peas or asparagus,
Prune whip.	

BREAKFAST:

Prunes with cream,
Hominy or oatmeal,
Glass of milk.

LUNCHEON:

Baked kidney or navy beans,
Slaw or celery,
Whole wheat or bran muffins and butter.

DINNER:

Clear soup,	Fish or lamb,
Boiled onions,	Light custard with wafers,
Baked potatoes.	

Much has been written on how to obtain a balanced ration. In my discussion of the different classes of foods, I have tried to explain this as far as possible. Not only do we need a balanced ration, but need to know how much food shall be taken daily.

A calorie is a kind of a rude estimate of the amount of nourishment in different kinds of food. A hundred calories is taken roughly as a unit or basis to reckon the food values of the different kinds of food.

I will give four menus for people to select from. Giving one for a man at rest, another for a man doing sedentary work, another for a man doing hard work and the last one, the average daily meal, which I have found to be satisfactory in my case.

I want my readers to remember that these are but outlines to assist each one to make out the menus best suited to his individual needs. I wish to remind them also that some foods contain a very high calory for producing heat and energy, but are more difficult in digestion and far more difficult in eliminating ashes and waste, often seriously overtaxing the excretory organs and bringing on premature old age. This especially applies to meat and cane sugar when used to excess.

DAY'S MENU FOR MAN AT REST—1800-2000
CALORIES. TOTAL, 1877 C.

BREAKFAST****300 C.

Shredded Wheat.	100 C.	Milk or Cream.	100 C.
Raspberries fresh	50 C.	1 Slice Toast & ½ Pat	
		Butter	150 C.
Cup of Hot Water.			

DINNER*****830 C.

Cream of potato soup		Baked macaroni with	
..... ..	260 C.	cream sauce . . .	190 C.
I Slice Whole Wheat		Butter beets pure. .	30 C.
bread and ½ pat		Sliced peaches . . .	50 C.

butter150 C. Sugar and cream 150 C.

Cup of Hot Water.

SUPPER*****647 C.

Creamed Green lima beans on toast.....200 C.

Soft boiled egg100 C.

1 Butter100 C. Lady Finger50 C.

Creamed tapioca pudd- 1 Cup of Hot Water.
ing197 C.

DAY'S MENU FOR MAN DOING SEDENTARY
WORK—2200-2800 C. Total 2714 C.

BREAKFAST*****809 C.

Baked apple 79 C. 1 Slice Graham Toast,
Milk or cream....230 C. 1 pat butter ...200 C.

Bran and oatmeal 300 C. Cup of Hot Water.

DINNER*****955 C.

Chicken Roast....180 C. Boiled sweet potatoes
.....150 C.

2 Whole Wheat Bread and 2 pats butter....400 C.

Fresh Spinach25 C. Peach Cobbler with
Cup of Hot Water. Whipped Cream 200 C.

SUPPER*****950 C.

Eggs creamed on Cottage cheese ...100 C.
toast500 C. 2 Corn Muffins...300 C.

Currant Jelly 50 C. Cup of Hot Water.

DAY'S MENU FOR MAN WORKING HARD—
*****3500-4000 C. Total 3976 C.

BREAKFAST*****1406 C.

Whole orange . . .100 C.	Cream of Wheat 135 C.
Milk, cream and sugar230 C.	French Toast with Ma- ple Syrup.....741 C.
2 pats butter . . .200 C.	Cup of Hot Water.

DINNER*****1486 C.

Ham minced with scrambled eggs616 C.	
Mashed potatoes 100 C.	Cabbage salad with Sugar and lemon120 C.
2 Whole Wheat bread & 2 pats butter ..400 C.	3 stewed figs.200 C.
Tomatoes sliced. . .120 C.	Sugar Cookie50 C.
Cup of Hot Water.	

SUPPER*****1084 C.

Creamed Chicken on Toast400 C.	
2 Whole Wheat Bread and 2 pats butter.210 C.	
Green peas with milk130 C.	Apple Sauce145 C.
Cocoanut Cake . . .209 C.	Cup of Hot Water.

THE AVERAGE DAILY HEALTHFUL MEAL
Total 2495 C.

BREAKFAST*****775 C.

Apple Sauce145 C.	1 Shredded Wheat with 4 tablespoons Bran, Pillsbury100 C.
Milk, cream.230 C.	2 Whole Wheat Toast, 2 pats butter ..400 C.
Cup of Hot Water	

DINNER*****795 C.

Baked potatoes...100 C. Mutton Chop....300 C.
 Whole Wheat Bread and pat of butter.....200 C.
 Lettuce with Lemon and Sugar..... 25 C.
 Breaded tomatoes.....100 C. Almonds, 20 C.
 Pecans ..20 C. Walnuts ..20 C. Raisins, 2 tea-
 spoons 10 C.....70 C.

SUPPER*****925 C.

Potato Cake....100 C. Soft boiled egg....100 C.
 1 Plain Muffin and 1 pat butter.....200 C.
 Prune Sauce with cream300 C.
 Two Lady Fingers150 C.

Cup of Hot Water.

Leaf or head lettuce with strained honey makes a very nice combination.

In the January, 1923, American Magazine appeared a very interesting article entitled "What To Eat" by E. V. McCollum, of the School of Hygiene and Public Health of Johns Hopkins University. He says, "Many people even young are suffering from serious digestive troubles after eating who think the cause is due to eating some particular food, but is really due to unhygienic condition of intestines caused by eating wrong kinds of food. According to recent discoveries, when there is a decomposing mass in the intestines, it reverses the per-

istaltic action and tends to bring things back to the stomach instead of from the stomach.

The gas which forms from this irritated condition, does not come from the stomach, but from lower intestines. The regurgitation of gas and intestines cause nausea and belching. Bile is forced from intestines back into the stomach and some of it goes up as gas, as one experiences a bitter taste. This is a typical bilious attack. It is not due to sluggishness of the liver, but faulty diet.

The potato, meat, bread diet does not furnish sufficient nourishment to maintain health either in animals or men, but should contain greens, vegetables, cereals, egg yolks and milk to maintain the required vitamins, mineral salts and normal health."

Our bodies are built up from the food we eat. There is a constant breaking down of the tissues of the body. Every movement of every organ involves waste, and this waste is repaired from our food. Each organ of the body requires its share of nutrition. The brain must be supplied with its portion; the bones, muscles, and nerves demand theirs. It is a wonderful process that transforms the food into blood; and uses this blood to build up the various parts of the body; but this process is going on continually, supplying with life and strength, each nerve, muscle and tissue. Those foods should be chosen

that best supply the elements needed, for building up the body. In this choice, appetite is not a safe guide. Through wrong habits of eating, the appetite has become perverted. Often it demands food that impairs health and causes weakness instead of strength. The disease and suffering that everywhere prevail, are largely due to popular errors in regard to diet, but not all foods wholesome in themselves are suited to our needs under all circumstances. Our diet should be suited to the season, to the climate in which we live and to the occupation we follow. Food that can be used with benefit by those engaged in hard physical labor, is unsuitable for persons of sedentary habits or intense mental application. Nature's abundant supply of fruits, nuts and grains is ample, and year by year the products of all lands are more generally distributed to all. Nuts and nut foods are being used to take the place of meat. Nuts combine with grains, fruits and some roots to furnish healthful, nourishing foods. Dried fruits are most healthful and should be used more freely than is customary. *There should not be a great variety at any one meal, as it encourages overeating, and causes indigestion.* It is not well to eat fruit and vegetables at the same meal. Eat the fruit at one meal and the vegetables at another. The meals should be varied from day to day, then the food is better relished, and the

system better nourished. With the use each day of some raw fruit, raw milk, properly pasteurized, and fresh, uncooked vegetables, one is assured of getting the vitamins now known to be so necessary, and this is the cheapest, surest and best way of getting them. In man's tampering with nature's original form of food, we have learned that he was throwing away not only vitamins but valuable minerals, and we know we have suffered greatly thereby. Peas, beans, lentils and peanuts furnish protein elements for tissue repair. Nuts supply fats and other essential elements. The use of these foods needs guarding as to quantity, for not everyone can digest them. Most people ignore every principle regarding the proper combination of foods. For a time they may be strong enough to do this without apparent harm; but harm is being done, and in time will manifest itself. Often after overeating of too great a variety of foods, one will feel badly and have discomfort and blame some article of food all right in itself, for the trouble, when the cause is really a bad combination of foods. A very popular combination, and one that people are extremely loath to give up, is the free use of sugar and milk, or cream, together. Both are wholesome foods in their place, but when put together they are a prolific cause of digestive disorders. This is a frequent cause of "billiousness," or billious head-

aches. Sugar and milk together, or any other sweet in excess, fairly makes the liver groan with work. Sweets take up so much oxygen from the blood for their oxidation that the liver is gorged with blood and the digestion of other food is delayed. Acid fruits do not combine well with a meat diet, or one that is rich in nitrogenous food elements, or one in which starch predominates. Fruits are not digested in the stomach and if the stomach is empty when they are eaten, they soon pass out of the stomach, whereas meat requires several hours in the stomach and delays the passage of fruit from this organ, and so fermentation results. The best way to eat fruit is to make a meal of it, eat all you want, or combine it with toast, zwieback, or some toasted cereal. Sweet milk with acid fruit is another wrong combination. Fruits and vegetables do not make a good combination when eaten at the same meal, because of the readiness with which both these foods undergo fermentation and decomposition, and if sugar is added to this combination the fermentation takes place more rapidly and is more marked. Another bad combination is acid fruit and tea or coffee with milk and sugar. Many have sour stomachs from this mixture. Some of the good combinations are: (1) soups, protein food (eggs, nuts and legumes) and vegetables, (2) vegetables and cer-

eals. (3) vegetable salads and any combination with vegetables, milk or cereals. It is understood that butter or fat goes with any combination of carbohydrates and protein.

CHAPTER VII.

REMARKABLE "POISON SQUAD"—500 SAILORS ON GERMAN RAIDER

THE following remarkable history of a German Raider during the World War, we take from "The Science of Eating" (a book written by Alfred McCann,) which is a startling example and convincing proof of the bad effects of eating foods that have been demineralized and denatured, that is robbed of their vitamins and mineral salts—(the kind that most of the American people are living on today) is found in reading the history of one of the German Cruisers, Kronprinz Wilhelm, which raided and sank fourteen merchant ships during the World War.

August 3rd, 1914, the German Cruiser left Hoboken, and roamed the seas for 255 days, subsisting on supplies taken from French and British merchantmen, before she bombed them. During this period of 255 days, she touched no port, depending entirely for coal and provisions on her raiding ability, and her speed of 26 knots an hour in escaping French and British war ships. Sept. 4th, 1914, she sank the British Steamer Indian Prince, bound from Bahai to

New York, after seizing all her coal, meat, white flour, oleomargarine, canned vegetables, coffee and soda crackers.

October 7th, the British refrigerator steamer *La Correntia*, bound from Argentina to London, with 5,600,000 pounds of fresh meat, was sighted. The Germans ran her down and took from her enough fresh meat to supply her needs for several years and then sank her. Fresh meat, white bread, oleo, and boiled potatoes, are generally assumed to be life sustaining foods. The Germans unwittingly, had commenced to explode that theory. The subtle, slow-moving influence of their refined, and demineralized diet had not yet broken the 500 sturdy German sailors. At the end of four months they had no suspicion that the fruits of their raids were actually eating into their lives and breaking down their health.

A month passed— more ships were raided and bombed after taking all the coal and supplies they could store.

Then the ship's surgeon began to observe the pallor of the ship's crew, the dilation of the pupils of their eyes and marked shortness of breath, but he paid little attention to it.

But as time went on, more startling symptoms appeared, fifty of his men began acting "queerly" and they seemed so weak.

This surgeon did not heed the fact that there is a balance of acid and base forming elements in the "ash" contents of all food, and forgot that in the food he had seized, the base forming elements had all been processed out.

These German sailors did not know a diet of refined foods sets up a mild chronic acidosis which abstracts the lime salts from the tissues, muscles, nerves and bones.

Then the limbs of the sailors began to swell and they suffered muscular weakness, neuralgic pains and effusions in joints. They were consuming enormous quantities of the refined foods of high caloric value, now so extensively relied on as the staples of healthful food, and looked in vain for the cause of their sickness.

A few weeks later alarming symptoms began to develop. Typical symptoms of paralysis, dilated heart, atrophy of muscles and pain on pressure over nerves, with well marked anaemia. Fifty of the men could not stand on their feet. They were dropping at the rate of two a day. It seemed that a curse had descended upon the cruiser, and the crew was going to pieces. Her wireless told her Newport News had given harbor to Prince Eitel Freidrich, so with lights out, she made the dangerous run and arrived safely at Newport News, with 110 very sick sailors, and the

balance of her 500 sailors in dangerous condition, the result of living 255 days on refined demineralized foods.

All medical treatment failed, but when Alfred McCann, the noted food expert, explained to the ship's surgeon the cause, and also suggested the remedy of giving the men food and drink that contained the precious mineral salts; a marked improvement was soon noted. A tea made from wheat bran, soaked in warm water, was given freely, with water in which potato skins had been boiled. The yolks of three eggs in whole milk were taken three times a day with whole wheat bread, and plenty of fruit. In ten days, forty-seven men were almost well, and the more severe cases slowly improved.

One of the ships this German Cruiser captured, had many thousand bushels of wheat, but it was sunk and not a bushel of wheat saved, but had these sailors only known the cause of their sickness, and its cure, a small quantity of this wheat would have furnished them the precious mineral salts, they needed in their diet and restored them to health.

One might ask why does not this diet affect our people who live on a similar diet? The answer is, they get some off-setting foods, which prevent a quick and marked disease, as in the case of the German sailors.

But the evil effects of improper diet are apparent everywhere, as it slowly but surely undermines the health of the American people, lowering their health and vitality, and making them susceptible to the attacks of disease and premature old age.

They were consuming large quantities of the refined foods so extensively used by Americans, and they looked in all directions but the right one for the cause of their troubles.

They simply continued to raid as long as any strength remained to them. Americans do develop the same conditions, but because they eat many other off-setting foods, that the German sailors were not able to obtain, the severity of the condition is modified. Thousands of children in the United States have always been like the crew of the Kronprinz Wilhelm, and they do not obtain these offsetting foods in sufficient quantity to maintain proper growth and vitality. In the case of adults there are thousands who make improper choices and combinations of food, depriving themselves needlessly of these off-setting bases.

CHAPTER VIII.

DIGESTION

THE digestion of the different foods is quite an intricate process. The first, and a very important process, is mastication. It has a double purpose. First, in reducing food to a liquid mass, and second, by their mixing with saliva, starch foods are changed to maltose, by the active digestive ferment ptyalin. Hence, food should be thoroughly masticated if the digestive functions are to be properly carried out.

If this first step of digestion is properly carried out, the subsequent processes are controlled largely by the sympathetic nervous system, which telegraphs ahead for the kind and quality of the digestive ferments needed to complete the process, which is usually performed. An excellent rule to avoid eating rapidly, is to eat the first four or five mouthfuls slowly, and in this way a pace is usually set for the rest of the meal.

We have five digestive organs, and five digestive fluids. The five digestive fluids are:

1. Saliva.
2. Gastric Juice.

3. Bile.
4. Pancreatic Juice.
5. Intestinal Juice.

Saliva changes starch to grape sugar or maltose. When the food reaches the stomach it comes in contact with the gastric juice, which is a powerful germicide. This gastric juice is strongly acid, due to the presence of Hydrochloric Acid, and it changes albumenoids into Peptone. There are about seventy ounces, or over a quart, of this fluid secreted everyday by a healthy person for the digestion of three meals. Starch digestion goes on in the stomach for half an hour, or until enough gastric juice is secreted to make an acid medium.

Stomach digestion is essentially confined to the nitrogenous matter of the food, which must be reduced to a soluble state before incipient digestion is attained, and their preparation for absorption is completed. As we begin to eat, this wonderful force that controls digestion starts a digestive agent from the walls of the stomach known as Pepsin, and its function is to render soluble nitrogenous elements of food.

If we do not eat too much or too rapidly, in normal health the action of Pepsin goes on rapidly, so that in a few hours after eating protein food, the stomach is practically empty, the food passing out of the stomach

through the Pylorus into the Duo-denum, for the final steps of digestion and assimilation.

We now come to a very important part of digestion and assimilation, that which takes place in the small intestine, sometimes spoken of as the lower stomach. Here the bile, pancreatic juice, and the intestinal juices act on the food, immediately after leaving the stomach, and here the great absorption takes place. It is under their influence that liquid blood is converted into solid tissue, and the energy locked up in the food is set free through the elements of food. It is well said that, "Assimilation is Creation." Both the starch and nitrogenous elements of food have been partially liquified, also the sugars and fats are practically so, at the temperature of the stomach. Thus we have a somewhat heterogenous, semi-liquid mass passing into the stages of final digestion.

The acidity of the stomach's contents is here neutralized, in the Duo-denum, either by the absorption of the acid, or by a combination with bases, supplied by the bile, pancreatic and duo-denal juices. As the food passes into the duo-denum, or upper part of the small intestine, very important digestion takes place. The pancreatic juice here performs a very important office in giving the food a "once over" again digestion.

The three digestive enzymes secreted by the Pancreas have three offices to perform. First, to transform

starch into sugar, the same as saliva. Second, to act on raw starch and to complete the breaking down of the nitrogenous tissues, the same as gastric juice, and third, to emulsify and split fat globules, completing any work not performed by the bile.

The liver secretes a large quantity of bile. Its principal office is to emulsify fats, helping to neutralize the strong acid gastric juice so that it will not injure the mucous lining of the bowels. Bile is an excretion and secretion. Although a poison itself, it destroys other poisons and makes them harmless, and it also helps to prevent constipation—altogether a very important organ of the body. Thus the food as it passes through the small intestine is reduced completely to suitable form for passage into the blood stream. The final splitting of the protein molecules into Amino acids is accomplished in the membranes of the intestines, and it is claimed by some authorities, in the tissues of the body.

There are three active ferments in the digestion of food. Those which split starch and sugar are called from the Latin name of starch, Amylases. Those that reduce the nitrogenous tissues to their final form of assimilation are called Proteolytic ferments, and those that split the fats are called Lipases.

The main object of digestion is not simply to secure a liquid which will be absorbed into the blood

stream, but it must reduce these materials to a form suitable for use in the body. The main purposes for which we take food into the body are to build tissue, to restore waste and to supply energy and heat. These three great purposes in the selection of food should ever be kept in mind, and we should avoid other foods that interfere with their digestion and assimilation.

It is known that the final forms into which foods are disintegrated show that the sugar we eat is converted into dextrose and levulose, while the starch is changed chiefly into maltose, dexterine and dextrose. The fats are emulsified and split into glycerine and fatty acids, and the protein foods are reduced to Amino acids. The various Amino acids are the fundamental building stones of all the nitrogenous tissues of the body. When the various forms of food under the influence of enzymic action have been reduced to the proper degree of subdivision they pass readily through the walls of the intestines and enter the blood stream on their way to new life and new duties.

In this brief review of the digestion of food, please note the changing acidity and alkalinity of the digestive secretions. Saliva mildly alkaline, gastric juice strongly acid, then the food products restored to alkalinity by the digestive ferments, bile, pancreatic, and intestinal juices. Remember that the blood must be

maintained slightly alkaline in order to enjoy good health.

Hence, we can see the evil of eating large quantities of cane sugar which can not be digested by the human stomach, and which is acted upon only by the intestinal enzyme. There are other enzymes that aid in digestion, and here the most important digestion takes place.

The most injurious forms of cane sugar are candy, rich cake and pastries, which cause fermentation in the alimentary tract, seriously interfering with the desire for, and the digestion of wholesome food. The whole system is flooded with this acid condition, and more or less of it is absorbed into the blood stream, throwing an enormous amount of work on the pancreas and kidneys. In trying to eliminate, a work they can only partially perform, the pancreas and kidneys leave a lot of these poisons in the blood to irritate the nerves and great nerve centers, seriously interfering with the nourishment of the body.

It is often found that the cause of nervous breakdown is due entirely to the above condition, and instead of an operation to discover and remove some local infection, the patient needs a proper diet. Very often it is found that the excessive use of cane sugar, meat, tea and coffee, or any one of them, is the main cause of rheumatism, high blood pressure, kidney and

heart trouble. I have talked with hundreds of people in my wide travels who are afflicted with these diseases, and nine times out of ten I find that they have used one, two or three of the foregoing foods in excess, and it has undoubtedly been the cause of their sickness. I find a number of the noted physicians who tell me their experience is the same with their patients. They find in many cases that it is not necessary to perform a surgical operation to remove the tonsils or adenoids or to extract teeth, but to recommend a correct diet, avoiding the excessive use of these three above mentioned foods and drinking plenty of water with whatever proper medical treatment might be indicated.

Meals should be taken at least five hours apart, six or seven hours is better. Dr. J. H. Kellogg suggests that for some people two meals are better than three, breakfast at eight or nine and dinner at three or four. I have my main meal at noon, and I never want supper after six P. M., a light supper at that. Never eat a hearty meal late at night. Don't eat too many kinds of food at a meal. Many people are much better off with two meals, omitting breakfast or supper, or eating a little fruit instead at one of these meals.

Each digestive process depends on the thoroughness of the preceding one. If you start right and masticate each mouth full of food thoroughly so that

it can be swallowed without any effort, the sympathetic nervous system takes charge of it and each succeeding process is well done. If you fail to do your part properly it can not be a success. Chew, chew for your life.

Don't eat except when you are hungry, then your system needs it and it can handle it. Most of us eat one-third more than we should. Thorough mastication is the surest way to avoid over-eating. *Many of us would be surprised if we knew how little food we needed, if it was the right kind of food, and taken at the proper time* Waste and ashes must be eliminated from our systems.

The drinking of plenty of water, at least ten glasses a day, the eating of proper foods, whole wheat bread, plenty of wheat bran, with a generous amount of vegetables and fruit, will, in a short time, restore a normal action of the bowels so that the waste should be eliminated at least once a day. Twice is much better, morning and night, which practically eliminates danger of auto-intoxication.

Enemas and mild laxatives, spoken of in another part of this book, must be resorted to. Don't allow the waste to remain in the system. You never can hope to have good health if you do. All great authorities are agreed that it will break down the health of anyone who neglects this practice, as the re-absorp-

tion of the poisons of the system will slowly undermine the health, bringing on auto-intoxication, disease and premature old age. The body must have plenty of water to carry on its functions properly and if we fail to drink plenty of water, the waste is absorbed from the bowels, carrying with it the poisonous waste and we must suffer the consequences of auto-intoxication.

To assist digestion we must have the proper mental condition. The condition of the mind has a powerful influence on the digestion through the sympathetic nervous system influencing every organ of the body. It also effects the action of the heart, circulation of the blood, the condition of the skin and the condition of the capillaries and some of the excretory organs of the body. A well poised mind is the most valuable possession in this world, and our mental condition can be improved with the proper exercise of the will. If we would but select the proper foods, and be careful that they are thoroughly masticated before they are taken into the stomach, the following wonderful intricate steps of digestion and assimilation will all be carried on in perfect order. When a person is laboring under great mental stress of worry, fear, or hatred, it is impossible for the digestive organs to properly perform their functions. I have always tried in my poor way to avoid becoming very angry,

but sometimes the provocation was so great and my ability to control below par, that I became very angry, and I have noticed a serious disturbance of the digestion always follows one of these conditions. I afterwards usually feel ashamed and chagrined that I gave way to such feeling, even though the provocation was great.

An illustration of the effect of the mind on digestion will give a striking experience of a doctor in my city. This doctor's wife was an expert in giving curtain lectures, and as the doctor was a very busy man she found that the best time to relieve her mind was at the dinner table. The doctor discovered that if he ate dinner at one of these times he was so much disturbed mentally that he had a severe attack of indigestion and that it required a day or two of careful treatment to recover from it. After he discovered this, when he came home to dinner and could foresee the impending storm he would excuse himself, go down town to a restaurant, eat his dinner in peace and have no indigestion afterwards. The case is still more remarkable when I tell you that he is an unusually healthy man with good digestion.

Here is another story of a man who came home to dinner feeling fine, but his wife talked life insurance for a time and he lost his appetite. The dining

room should be pleasant and cheerful. Don't chide children severely at the table, avoid all unpleasant subjects at this time.

CHAPTER IX.

WATER

THE Lord gave us but one real beverage and that is water. All the other so-called beverages or foods are simply stimulants and sedatives. Milk is a very rich and perfect food, one glass having as much value as two eggs. Coffee, tea, chocolate and cocoa are but stimulants, and their after effects are sedative. Their food value is very small, depending largely upon the amount of milk, cream or sugar put in them. When we think of drinking some fluid for the sake of supplying the bodily needs we should think only of water. If other liquids are taken they should be taken only as foods or drugs.

Water is the best solvent known, and is more necessary for the continuation of life than anything else except air. Pure natural water contains some gases and salts. Water that contains much nitrogenous substance is unfit for use. If the water is very hard and heavily loaded with lime and many other salts, it should not be used extensively as a drink until it has been boiled for half an hour, or distilled. If too much mineral matter is taken into the system

the body is unable to get rid of it, and deposits are formed in various parts of the body, bringing on too early a hardening of the bones and arteries. This also helps to cause rheumatism and other diseases and may prevent full development of the body.

The nearer water is soft the more perfect it is for drinking purposes. At my home in Joliet, Illinois, the water supply comes from deep wells drilled in the limestone, and is very heavily impregnated with lime and other minerals. In other parts of the country, especially Florida, the deep flowing wells have a very large percentage of sulphur and other minerals. All water of this class should be boiled for one half hour. The lid should then be removed from the tea kettle while the water is still hot. In this way the steam passes off, the air passes back, and the water is aerated and it does not taste like boiled water. Pour off the top two-thirds of the kettle of water when it has cooled, into a bottle or pitcher, and place it in a convenient place to use for drinking purposes, throwing away the balance that is in the tea kettle. I find that water very heavily impregnated with minerals is not so easily tolerated by the stomach, especially when we are trying to increase the quantity of water, and it throws extra work on the kidneys to remove these minerals. If the water supply is not heavily impregnated with minerals and is pure, without danger of

infection, then the boiling is unnecessary. The boiling of water not only removes the excess of minerals, but it also gives absolute protection from any form of infection that might have been present in the drinking water.

Water forms about three-fourths of the human body and is used for every process that goes on in the human body, and "to be dry is to die." We cannot successfully run a steam boiler without plenty of water, neither can the human body carry on life's functions successfully without plenty of water. Water is absolutely necessary to carry on proper nutrition and assimilation of food and to carry the waste part out of the body. Water keeps the vital fluids in solution so that the different functions of the body can be carried on. Without water there would be no sense of taste, no digestion, no absorption of food, no excretion of debris, and hence no life. Water is the vehicle by which the nutritive elements are transported to the billions of cells of the body and it also helps to carry the waste to the excretory organs. We can live several weeks without food, but only a few days without water. Ice cold or extremely hot water, or other beverages are excessively irritating to the human stomach. Water is best taken warm at meal time and cool the rest of the time, but be careful to avoid the extremes of heat and cold in its use.

The amount of water required in twenty-four hours varies as to the circumstances and the season of the year. Four to five pints, or ten glasses a day is a very reasonable amount to be taken into the system. Two glasses in the morning on arising, a glass of hot water at each meal three times a day, two glasses of water an hour before dinner and supper, and a glass at retiring makes a very desirable combination.

I have seen a number of very healthy people who prefer to drink two cups of hot water at each meal. In this case they do not need as much water between meals, and such people usually have the very best of health. Every one must work this out for himself and notice whether he feels better after having taken one or two glasses of hot water at a meal.

Water and all beverages should be taken slowly into the stomach. Ice water and ice drinks should not be used at all as they retard digestion. Digestion will not take place until the stomach has reached a temperature of approximately 100° Fahrenheit, and if repeatedly chilled it is very liable to interfere with digestion and cause more or less fermentation. Little water or fluid should be taken into the stomach for at least two or three hours after a meal.

Most people drink too little water, but if the amount has to be increased considerably do so very gradually, slowly increasing the amount taken into the

system day by day, thus preventing water logging of the body which has a very weakening effect.

Dr. E. L. Parmeter, of Albion, Michigan, a very successful physician, claims that he can cure almost any case of constipation by the drinking of ten glasses of water a day. I will add that in chronic cases of constipation of long standing, a little help is needed to get a regular movement of the bowels, until the proper use of laxative foods and the drinking of plenty of water will take care of it.

When time to retire at night (about 10 P. M.) I take a quart bottle of boiled water and an empty glass and place them on my bed room dresser, and upon first arising in the morning (about 6:30 A. M.) I drink a glass of water and another one while dressing. In this way, by the time I have finished dressing, built fires, worked in the garden, or performed any household duties, enough time has elapsed to allow the water to pass out of the stomach, thus washing out any remnants of a former meal, and I have a clean stomach for the reception of breakfast.

Try this plan, and see how much better your breakfast will taste, and how much better you can digest it and assimilate its life giving elements, and the energy and endurance it will give you. If possible drink water freely again one-half or one hour before dinner and supper, and if you are eating right

foods, see your strength and weight increase and the pink color come back to your cheeks.

Try it. It costs practically nothing and you will feel amply repaid for the very little time it requires to do this simple duty.

CHAPTER X.

BEVERAGES AND ALCOHOLIC DRINKS

POP, ginger ale root beer, orangeade and many other drinks of this kind, are very popular summer drinks. They have very little food value, and while not very injurious, they apparently appeal merely to the taste. Pure ice cream, if properly made and eaten slowly and not taken after a heavy meal, is considered a healthful food. When added to soda water and the rich syrups that are usually added to it, it is a little more difficult to digest. Some beauty specialists claim that ice cream sodas are bad for the complexion and if young women knew this they would no doubt eat their ice cream in a plain state.

Lemons are a very healthful food and should be used much more freely than they are at the present time. The lemon juice is very rich in the mineral salts, but it should not be taken clear into the human stomach as it is too strong. When made into lemonade by the addition of a very moderate amount of sugar, it makes a very healthful drink. In case of severe colds, or threatened attacks of "flu," la grippe, or other diseases, a bowl of hot lemonade at bed time,

following a good hot foot bath is an excellent plan to assist Nature in ridding the body of these diseases.

Grape juice is a very healthful drink and should be consumed far more freely in the United States than it is today. I am not referring to wine or fermented beverages. I am simply referring to the pure grape juice to which has been added a small amount of sugar and brought to the boiling point and canned so that it will keep indefinitely. There are many other ways in which the pure grape juice is preserved to keep it from fermenting and placed on the market. I consider grape juice one of the healthiest drinks in the world. Grapes are very rich in grape sugar, which is one of the healthiest and easiest digested sugars. The California Malaga white grape is especially rich in this grape sugar and should be eaten very freely by everyone as long as the fresh grapes can be found on the market. These grapes, when exposed on trays to the wonderful air and sunshine of California where they grow to their greatest perfection, instead of spoiling, simply dry up and form our raisins, by the evaporation of the water in the grapes.

Some of the so-called "soft drinks" contain substances that make them a habit forming drink and their use should be condemned. These drinks should not be used.

One of the enemies of health I wish to warn you against is drinking coffee. Some people in active out-door work, claim they can drink a cup of coffee in the morning without any serious bad effect, but most people should not use it at all. For fifteen years I have not used coffee, although I am very fond of the taste. The free drinking of coffee two or three times a day, especially at night, cannot be condemned in too strong terms. Tea is almost as injurious as coffee, and most people should dispense with both of these beverages. The theine in tea is almost identical with the caffeine in coffee and the effect is almost identical in its effect upon the human system. Theine also retards digestion.

If people think they must use these two beverages, they should be used sparingly in the morning and well diluted with hot water.

Cereal beverages are perhaps considered the least injurious of the so-called beverages which are used at meal time. But the best and most healthy of all drinks is a cup of hot water (with nothing added) at meal time.

There is a great diversity of opinion throughout the world with regard to the food value of wines. Some claim that the sour wines' of France, Germany and other European countries when made without great adulteration are healthy as used by the natives.

Other authorities claim that the sweet port wine is healthful. The great objection to wines is that they have too high an alcoholic content. There are many cases of sickness or weakened physical condition due to disease, exposure, or old age in which the use of a little wine might be beneficial and an aid to the human system in getting back to normal condition, but too free a use of wines with high alcoholic content by people in ordinary health does not add anything to their strength or length of life. Whenever we use any drink that is a stimulant and might give us a temporary feeling of improvement it is always followed by a corresponding or even greater depression.

I can not condemn in too strong language the use of alcoholic drinks. Whiskey has perhaps caused more misery than any other one thing in the world and I welcome the Volstead Act as an aid to those who have not the will otherwise to withstand this great menace. I think it should be the duty of every good citizen to try to uphold this law which is now furiously attacked by those who believe in unrestricted use of alcoholic beverages. It pleases me to see that education along temperance lines is spreading rapidly and that people are learning more and more of the blighting effects of alcohol.

Prohibiting the manufacture of alcoholic beverages and whiskey has caused great opposition and

many have gone into the manufacture of "Moonshine" which is even more dangerous than whiskey. It has been known that the drinking of four or five ounces of crudely made "moonshine" (about a half glass) has in many cases caused total blindness which is absolutely incurable. Wood alcohol, fusel oil and these other dangerous ingredients which are the product of this crude fermentation, without any effort having been made to remove them, simply paralyze the optic nerve and for the rest of his days this person must be blind—a calamity practically equal to death. When a glass full of this dangerous stuff is taken at one time it has been known to cause almost instant death. These dangerous elements found in this crudely made whiskey paralyze the nerves of the heart, and so many people who think they are trying to beat the government in evading the law which they do not like, but which is made to protect them, will persist in drinking these most dangerous concoctions sometimes when they know there is a possibility of total blindness or death if they continue its use.

CHAPTER XI.

MENTAL STATE

THE human body consists of two hundred and twelve bones, which act as a frame work and to which are attached over five hundred muscles that give to the body its many movements.

It is all controlled by two great nervous systems. The Cerebro-Spinal, which must have sleep and rest, and the Sympathetic, which never sleeps or rests. These two systems are controlled by that God given principle which we call life. The sympathetic system controls the heart and circulation of the blood and the digestive system, and hence we see why it is necessary to have the right mental attitude if we hope to have good digestion. This is one reason why Christian Science has slowly increased. To be a Christian Scientist we must drive fear and the darker passions from our mind, and when we do this the digestive organs will function properly under normal sympathetic control, but if harrassed by fear, sorrow, worry and the like the sympathetic nerves do not control those organs properly.

Some writers divide the mind into the conscious, sub-conscious and the super-conscious. The conscious mind is governed by the will, and takes cognizance of things around us, reasoning out what we shall do. This part of the mind must have rest or it becomes unbalanced and we become insane. The sub-conscious mind never sleeps. It causes us to breathe eighteen times a minute, our heart to beat seventy times a minute, and attends to the digestion and assimilation of our food. It also works in our sleep as we can often remember our dreams. If we are frightened, angry, or otherwise not composed when we retire, our dreams are liable to be annoying and frightful, while if we go to sleep thinking of pleasant things our dreams will be of a different character, having happy and beautiful visions. For this reason we should not punish a child at bedtime, as it causes the sub-conscious mind to work in a combatative manner toward the one who punishes him.

It is by the working of the sub-conscious mind that the Christian Scientist, Faith Cure and Hypnotic cures are performed. Thus when we learn the effect of the mind, we should learn to control it, making it a benefit to us instead of a detriment.

If we keep our minds on pleasant and cheerful subjects the same impressions will be made on our sub-conscious minds and it will help to carry out the

different normal functions of the body. If, however, our minds dwell upon fear, hurry, worry, hatred and all the darker passions of life the same kind of impressions are made on the sub-conscious mind, seriously interfering with the control and functioning of the different organs of the body.

A number of persons who go to sanitariums are surprised and disappointed that they receive no medicine and very little treatment for a time after they go there. The fact of the matter is that they are so filled with patent medicines and drug habits at first, that it is impossible to tell how much their symptoms and diseases are due to patent medicines, and how much is due to disease. It is necessary to wait until their systems are relieved of these poisonous drugs before a proper course of treatment can be prescribed.

I do not believe that there is any surer way of shortening life than by continually taking patent medicine. Nearly all patent medicines contain alcohol, opium, or some nerve stimulant which makes the patients feel better for a time, but leaves them in much worse condition than they were before taking it. Patent medicines, like tobacco, make persons slaves to nerve stimulants. This is contrary to Nature, and when we break Nature's laws we have to suffer for it.

We should cultivate cheerfulness. "Twixt the optimist and the pessimist, the difference is droll."

“The optimist sees the doughnut, while the pessimist sees the hole.” It is not necessary to be a Christian Scientist, we should all be optimists. Most of us are enjoying far more blessings than we realize. Every day that we are free from pain and can sleep well and eat three meals we should give thanks to the Giver of all Good Gifts.

We should be thankful for our sanity; twelve thousand suicides last year, seventeen of them millionaires. I will relate a story of a doctor in Ohio who used to lecture on cheerfulness, but last year financial losses unbalanced his mind and he shot himself, leaving a wife and three children. Don't worry. My father helped me, he told me that I borrowed more trouble than I could pay back in two hundred years. When trouble and misfortune come, and they come to all, they nearly always come from a source from which they might least be expected, so if you can't worry about the right thing, why worry at all.

We must always remember that trouble and misfortune come to all, and when it comes, we should try to meet it as bravely as possible. When friends desert or betray us, we should remember that there is One who never fails us. Remember also, it is always darkest just before Dawn, and few conditions or misfortunes that come to us but what might be more disastrous.

A

Let us learn to play this game of life with a true, steady heart, ever willing to obey the good rules laid down for our greatest benefit. We should discard a large part of our selfishness and remember that it is more blessed to give than to receive.

Much of the darkness and misery of life would be removed, when we learn that one of the main objects of life is to be of service. We should try to forget, and not strive and work for many of the trivial affairs of life, which if attained, would be of little value to us but keeping to the main great object that is worthy of our best efforts, then we will get a clearer view point of life and its needs, and the desired end.

From the foregoing remarks, we can see the force and importance of keeping the mind on pleasant subjects so that the vital organs may all function properly. We should all try to cultivate a cheerful disposition. We are creatures of habit. With a little practice, one will find he can direct the mind to dwell on pleasant subjects just as easy as he can allow it to dwell on all the troubles of life.

We must learn to look on the bright side of life. The poet reminds us—

We must learn to trace the rainbow through the rain that promises tomorrow's sunshine again.

We get from others largely the same spirit with which we meet our friends. We should learn the following:

“Smile a while and when you smile another smiles. There soon will be miles and miles of smiles.”

DR. WILLIAM MAYO'S OPINION

The Mayo's Hospital at Rochester, Minnesota, was founded many years ago by Dr. Mayo, the father of Dr. William and Dr. Charles Mayo, who upon the death of their father, carried on the great work and enlarged and perfected it until today, it is the greatest institution of its kind in the world.

I have had the pleasure of the acquaintance and friendship of three very skilled and successful surgeons. They had studied in America, had travelled in Europe and had studied in the greatest Universities of Europe, and after coming back to America, I questioned them, and they all agreed that the Mayo Hospital at Rochester, Minnesota, is the greatest of its kind in the world, and if at anytime, they should need some major surgical operation, they would certainly select this institution to have it performed.

Dr. William and Dr. Charles Mayo have gathered about them a corps of several hundred of the most skilled surgeons and physicians in the world,

and when people go there to be examined, which examination takes several days, they may rest assured, they have passed through the most perfect, searching, physical examination that can be found anywhere. I merely give these few words of explanation about the Mayo Hospital, which is known to many people, to more fully impress my readers with the importance and authority of the following quotation from Dr. William Mayo, in an address delivered at the College of Surgeons, in Chicago, on October 21st, 1923.

“Dr. William Mayo says the Human Will is Weak.”

“Man’s proud brain power has not lifted him as high above the lower animals as he likes to think,” according to Dr. William Mayo. Even when he is awake, man is only a quarter conscious of what his body is doing, he said. Three-quarters of the energy created by the food man eats and the air he breathes is spent without his knowing it, Dr. Mayo declared.

Man’s will power is only about 25 per cent efficient, the surgeon declared. Certain of the misunderstood ailments result from the clash when the conscious mind attempts to gain control over the unconscious, Dr. Mayo said. Man may think as hard as he wishes, but he cannot think his stomach into taking proper care of the food he eats, for the process

of digestion is controlled by muscles endowed with a curious type of self control, he said. When emotional influences, spoken of as psychic, get so strong that they flood over and try to control the smoothly running unconscious system, troubles occur.

“Disturbances which more or less resemble real diseases are caused,” Dr. Mayo said. “The trained observer knows them to be false, but the enlightened patient accepts them as true. Herein, lies the success of the cults and quackeries which play these “diseases” for the real thing and reap a harvest.”

I quote the above extract from Dr. William Mayo's address, as it illustrates so clearly and forcibly the position I have taken in my book, that the mental state exerts a powerful influence on our digestion, general health and well being.

Let us learn to try to cultivate this cheerful, optimistic temperament so that the impression made upon our subconscious mind may be of the best, and that have influence and control over the vital organs of the body for our well being, that we may enjoy a long and healthy life.

I wish also to call my reader's attention to a speech just recently made by Dr. Charles Mayo at a very large gathering of surgeons and medical men. In his address, he goes on to enumerate some of the wonderful improvements that have been made in sur-

gery and in the treatment and prevention of all kind of diseases, and at the close of his address, he stresses this one point, "the supreme importance of a proper diet and balanced ration which is now attracting the attention of medical men all over the world."

I refer to these two great men, perhaps the greatest medical and surgical men in the world today, to show the trend that the medical thought has taken in the last few years. First, the tremendous power and effect that our mental attitude has upon our life and health, and the second by Dr. Charles Mayo, the even greater importance of the right kind of food and exercise. I simply refer to these two great men as their thoughts accord so perfectly with the writing of this book, and emphasize these great fundamental principles that are so absolutely necessary for us to follow if we wish to live to a healthy old age.

CHAPTER XII.

SLEEP

SLEEP is one of the most important functions of the body. As the physiologist Bohm remarks: "A man can live for a month without food, but he must succumb after a few days if he fails to sleep." Sleeplessness soon leads to insanity and death.

According to our present physiological knowledge, the center of sleep is seated in the brain, as the other functions, such as intelligence, will power, imagination, etc. The thyroid gland, to a great extent, controls our nervous system and mentality. Arnold Lorand, with a great mass of evidence, goes on to prove that this gland has a powerful influence on our sleep, and when this gland is diseased or altered, it produces a marked effect upon our ability to enjoy normal sleep.

According to Obersteiner and Binz, during sleep, the waste which has accumulated in the brain during the day is removed by the blood. Everything points to the fact that through sleep we are getting rid of the toxic products, and sleep is thus a function, the regularity of which is of the utmost importance

for our prospects for prolonged and healthy old age.

The thyroid gland destroys toxic products formed in the intestines, especially those toxins caused by the destruction of albumenoids—as we often notice sleepiness after dinner when partaking of a large amount of meat.

As the Pituitary body and the thyroid are in close relationship, this body may also have some influence on sleep. Prof. Sajor in 1903 pointed out that the adrenals also have an influence on sleep. The adrenals play a great role in the destruction or neutralization of microbic or other poisons introduced into the system, and are unquestionably anti-toxic glands. While the great scientists have been unable to explain in detail just how these ductless glands are performing such an important part in the human economy, they are agreed that they will perform their normal functions and duties in the human economy *if we but do our part in carrying on the harmonious workings of the human body.*

It is impossible to have a set rule or to state just how many hours of sleep a person should have every twenty-four hours, because some people require more sleep than others, due to their work, their mental and physical condition and their age, but we may say in general terms that most people should have at least eight hours sleep. At least a third of the twenty-

four hours should be spent in bed. I prefer to retire about ten o'clock and arise about six o'clock in the morning. The time of retiring, like *all of our habits, should be regular*. It is a very *poor plan* to go to bed extremely early one evening, and very late the next night. The best rule to follow in the amount of sleep one needs is to note how you feel in the morning when you awaken. One should feel entirely rested, refreshed, and ready for business. If one feels dull and sleepy and tired upon arising there is something radically wrong in his diet, in the amount of exercise he takes, or in the amount of time he has spent in bed.

Bed-rooms should be well ventilated, but at the same time so arranged as to prevent drafts of cold air from blowing on us when we are asleep. This can be accomplished in many cases by not opening the windows too wide. I would suggest not opening the windows too wide in the direction from which the wind is coming, but on the other sides of the room the windows should be opened wide. Often a hall or adjoining bed-room can add an indirect ventilation. A window board will often prevent a direct draft from blowing upon us, and yet allow a free exchange of pure air. A curtain can be arranged to prevent drafts, or a coat or blanket can be placed over the

back of a chair and placed two or three feet from the window to prevent draft.

There is a great difference of opinion about the proper position we should assume when sleeping. Some authorities claim it is the most healthful to sleep on the back, others claim that it is much more healthful when we sleep on our sides. If turned on our right side, with the limbs slightly flexed, which is better than our left side on account of interfering with our heart action, it an excellent position, although others prefer to lie on their backs. This must be settled by each one, who can tell by experience the position which is best suited to him and in which he can receive the most benefit and rest from his sleep. As far as possible, we should dismiss from our minds upon retiring all of the cares and perplexities of the day. Avoid all excitement as far as possible, and intense brain work before retiring, eating a light supper at least three or four hours before bedtime. With a little practice one will see that this will be very helpful in producing sleep soon after retiring. A very young baby should sleep nearly all of the time and if properly cared for and not over-fed, will usually do so. As a child grows older it requires less sleep and when we get quite along in years, we need still less sleep.

I can not emphasize too strongly the importance of sleep. As the poet says, "Nature's sweet restorer,

sleep.” In sleeping, the heart beats less frequently and less forcibly, the breathing is slower, the mind is at rest, and the sub-conscious mind is making repairs as a result of the day’s activities. This sleep should be undisturbed in order to get the best results. Children should always go to bed early in order to have enough time to sleep. Regularity must be observed. Those who are in a more or less weakened condition can often obtain a great deal of benefit from a “nap” taken during the daytime. When in a reclining position the work of the heart is lessened and all functions of the body require less energy to be carried on. It is an excellent habit for anyone who has a few minutes to rest during the daytime to lie down, even if one does not sleep. Some people feel better not to sleep in the daytime, because they sleep better at night if they have not slept during the day. This has been my personal experience. One can get far more rest and recuperation from a half hour’s lying flat on an easy couch with the eyes closed, and the muscles of the entire body relaxed, than he can obtain from two or three times this length of time while standing up or even sitting in a chair trying to read or do some special work that required some amount of energy. Dreaming comes largely from bad habits and generally follows some imprudence in diet or lack of exercise.

A tepid bath just before retiring is a great aid to sleep. If it is not convenient to take a complete bath, a foot-bath upon retiring is very beneficial in drawing the blood from the brain and keeping the feet in excellent condition. This latter suggestion applies especially to those whose work requires them to be on their feet the greater part of the day. A good normal sleep is not harassed by dreams and we waken from it thoroughly refreshed.

A comfortable bed with good springs and mattress has much to do with our enjoying healthful sleep. I recommend a small, soft pillow. Very large pillows may cause a gradual curvature of the spine and round shoulders.

CHAPTER XIII.

THE HUMAN HEART AND STOMACH

“**A** sound heart is the life of the flesh.” Prov. 14:30.

“The life of the flesh is in the blood.” Lev. 17:11.

From the book “Life” by Dr. John H. Kellogg, I have quoted a few paragraphs that graphically describe some of the wonderful functions of the heart.

“Of all the marvelous organs of the body, perhaps the heart is the most wonderful. No one knows what makes the heart beat. It is a witness to the never failing beneficent care of an Ever Present Intelligence. From birth to death this living pump never lays down its work for a moment, but goes on beating, now fast, now slow, feebly, or vigorously, as the needs of the body may demand. It drives the blood, the living stream of life bathing every cell and tissue, feeding every organ, and washing away the waste particles.

Another Will, Another Intelligence, beyond our control is ever present to see and direct and supply our ever changing need.”

The heart is about the size of the fist of its owner. Every moment we continue to live depends upon a

healthy heart, and yet people will deliberately continue to use coffee and tobacco, and other foods that seriously interfere with the heart's work. I will only say to those who use these things to excess, "you are simply flirting with the undertaker."

A good, healthy blood current is an absolute necessity to health and any length of life. The blood is composed of cells, white and red, the plasma, and the watery portion the serum. The red cells are by far the most abundant and in healthy blood should number five million to one cubic centimeter or about one drop. An adult man has twenty thousand times as many blood cells as there are people on the earth, in a single row would reach several times around the world. Yet they claim the average life of a red cell is six weeks, hence if we are wise we will eat good food that will nourish the blood. The red cells carry oxygen to the tissues and carry away the waste.

The white cells are watchmen, that protect us from germs of disease. When these germs enter the body, each white cell has the intelligence to capture and destroy it, or if in great numbers to build a wall around the diseased part, or carry the dead germs, and with worn out blood cells deposit them in the spleen.

Blood cells are manufactured in the marrow of the long bones, and especially in the ribs. When we remember many million blood cells must be manufac-

tured every day of our lives, we begin to realize how necessary it is to eat food that will produce them, and avoid foods that will interfere with their manufacture.

It is almost startling when we study the human needs for twenty-four hours; we breathe eighteen times a minute, over one thousand times an hour and twenty-five thousands times every twenty-four hours.

Our heart beats seventy times a minute, over four thousand times an hour and over one hundred thousand times every twenty-four hours. These figures when at rest. When we work and exercise they are increased at least one-fourth.

It has been carefully estimated that the work of the human heart in twenty-four hours, is equal to lifting one hundred twenty-four tons one foot high.

I have mentioned only the lungs and heart, when we consider all the other organs of the body which must be kept in operation, we can begin to realize some of the needs of the human body for twenty-four hours.

When we add to these needs, the strain of labor, and over-work, sometimes under the most trying and unhealthy conditions, we can begin to realize how necessary it is for us to eat those foods which are adapted to supply our bodily needs, with the least disturbance to our digestive organs.

For centuries the greatest scientific men of the world have been searching in vain to find what life

is. They have been able to separate a plant into all of its elements and know exactly what it is composed of, just what elements and just what amount of each kind of elements makes up this plant; but when they put these elements together in their proper proportions, they fail to make the plant because they cannot furnish the great God given power, we call Life. The same is also true of animals. We can separate animals and find out just what the body is composed of, put them together but we cannot breathe into them the breath of Life. That comes alone from God.

I wish to quote the following short editorial in the Joliet Herald-News, which illustrates this wonderful fleeting element and yet speaks so beautifully of the Eternal Mystery—so fleeting—and yet so lasting, more lasting than granite:

“A sweet-pea seed, after lying dormant five thousand years in the clenched hand of an Egyptian mummy, was taken to Cincinnati and planted in the garden of Mrs. Samuel H. Taft.

The seed sprouted. It produced flowers and more seed—enough to help buy a mummy for the Cincinnati museum.

The same has been done with wheat found in ancient tombs.

What is the mysterious thing in those seeds that could sleep fifty centuries without dying?

Answer that and you solve the Eternal Mystery: What is life?

Life—creature of machinery so fragile and minute that even the microscope cannot discover its secrets—is more lasting than granite.”

If people could only remember how wonderful this principle is, they would be more careful in taking care of their bodies and observing the general laws of health. If we should be fortunate enough to own an extra house which we could rent and we had an excellent tenant who took good care of the premises and paid his rent promptly, if we are a good business people, we would probably try to keep up the premises in a good state of repair so as to retain this good tenant of ours. If we would apply this same business principle to our own bodies, we might more forcibly see the advantages, nay, the necessity of keeping this human tabernacle of ours in a good state of repair so that our spiritual natures may reside with us for a longer time. Few people realize that when the conditions are favorable for such action how quickly we can pass on into the great Unknown. The hold of life that some people have on their bodies is remarkable. It seems able to withstand such a large amount of abuse, such a large amount of the tax of the various forms of disease but on the other hand there is hardly

a day but we see how fleeting is this Eternal Mystery of Life.

We can scarcely pick up a paper but we read an account of someone, who apparently in good health, suddenly drops dead without any premonition or warning. Now, healthy people do not die suddenly in this way. It is the ones who have been abusing their body or resorting to excesses of some kind that causes the heart to stop. It may be they have been smoking to excess, or the excessive use of coffee, meats, cane sugar, and rich pastries. These are the more common causes which bring on high blood pressure which causes so much extra work for the heart, and after a time the muscles of the heart become completely worn out and stop. Dissipation and excesses of all kind, great excitement, extraordinary physical exertion, working clear beyond one's strength without proper rest and proper food also are very strong factors to bring about these sudden deaths.

Nearly all writers of note, who have spent years in the study of health subjects and long life, emphasize the importance of leading a temperate life as far as possible avoiding all great excitement and all stimulants that upset the natural functions of the heart and the different organs of the blood.

The state of mind that some people seem to be in of constant worry and borrowing trouble, seriously

interfere with the functions of the heart and all the other organs of the body. One of the greatest battles in life is the battle with itself. We might find it is never ended, but it is well as far as possible to get complete control of ourself and one great danger that confronts us is to be able to be cool, collected and still able to do the right thing at the right time. We are creatures of habit. If we fail to exert an ordinary amount of restraint, we are getting worse and worse; while if we cultivate our will power, we can notice a greater improvement and we learn to be able to control ourselves much better under all trying circumstances, and thus preserve the normal functions of the heart and all the other vital organs.

THE HUMAN STOMACH

Under the head of "Digestion," I have described in detail the office and function of the human stomach, the most abused and yet most necessary of our vital organs. I just wish to add a word of caution in regard to the care of the stomach that will be of service to my reader.

In the first place, remember: "The stomach is not a play-house but a work-shop and can use only the material we supply." My advice is this: keep on good terms with your stomach because if you get into trouble with your stomach, as you certainly will if you

abuse it, you will get the worse of the controversy as the stomach always has the last word. Many people do not realize that the eating of improper foods especially cane sugar, candy and rich pastry, that are not digested until passed through the stomach, is the cause of a great deal of our stomach trouble, causing fermentation, and a sour, acid, irritated condition and formation of gases and a general discomfort of the stomach of the one who abuses it.

If this abuse is kept up for some time, the lining of the stomach becomes inflamed and after a time ulcers are formed which is a very serious condition, and means a serious breaking down of the patient's health. If this continues, these ulcers take on a malignant form and growth of cancers are started, which is a very serious condition.

Some of our modern banquets simply outrage the human stomach, unless those who attend, use considerable restraint in the choice of, and amount of food consumed.

These banquets usually occur late in the evening or night, after the usual three meals have been eaten.

When I attend these banquets, which occur early in the evening, and takes the place of supper, I usually select a few articles of nourishing food I like, and do considerable talking, and not quite so much

eating, as some of my friends, and feel much better the next day than they do.

Another great error against our stomach is the taking of too many kinds of food at the same meal, imperfect mastication of the food and the last and *greatest error of eating too much*. The older I get, the more careful I am of what I eat, and I see the greater necessity of treating my stomach in a proper manner. I wish you luck for all you get out of this world if you have a badly disordered stomach and digestion. It matters not what your position or wealth may be,

TAKE MY ADVICE AND KEEP ON GOOD TERMS WITH YOUR STOMACH

Like the other organs of the body, the stomach must have rest if we expect it to function properly. There should be at least five hours time between meals, giving time for the stomach to digest its food and to have rest before being called upon to work again.

CHAPTER XIV.

LAXATIVES

I DO not advise the continual use of these but only as expedient until such time as the individual can secure prompt and proper elimination of the alimentary tract by the use of coarse food, plenty of fruits and vegetables, bran and the use of the coarse, dark breads and drinking of nine or ten glasses of water daily. There are cases in which it is necessary to use some form of artificial laxatives. If one wishes to enjoy good health and reasonable length of life, prompt elimination of waste of the body must be removed at least once a day, (twice a day is much better, morning and night.)

If the individual after faithfully trying the foregoing suggestion in regard to food, drinking of water and plenty of exercise, fails to attain this proper elimination, then I suggest the following laxatives :

Mineral Oil or as it is sometimes spoken of, paraffin oil, is not a cathartic but strictly speaking, is a lubricant. It is tasteless and odorless and does not interfere with the digestive functions of the body. Mineral Oil is given freely in some of our great san-

itariums. It is sometimes taken in two tablespoon doses at night. Some obstinate, severe cases of constipation require considerable more and find it necessary to take it oftener, possibly a tablespoon full a half hour or an hour before each meal. The amount and frequency with which we should use mineral oil varies with the different conditions of the individual. Only such amounts should be taken as it is necessary to obtain desired results of free elimination of the waste and ashes of the body. There are some very obstinate cases in which mineral oil is not sufficient; cases in which the individual perhaps for many years has resorted to pills and severe harsh cathartics which leave the elementary tract in a worse condition than it was before and injures the delicate mucus lining of the intestines.

When we come to speak of laxatives proper, it is considered among physicians that cascara aromatica is among the very best as it may be taken for some length of time without serious injury and without losing its effect so that the dose must be increased as time goes on. A teaspoon full dose at bed time of this cascara aromatica is ample for ordinary cases. It is well for those who are afflicted with obstinate constipation to also continue the use of the mineral oil in smaller doses. But I think the finest laxative that is known to the medical profession is phenol-

phthalein. It is not a harsh cathartic but affects the peristaltic action of the bowels, and can be taken for quite long periods without injury to the individual. Phenol-phthalein is prescribed by many physicians and is put up in various forms for use. I consider Analax Fruit Tablets a very good form, which is very pleasant, and one of the very best laxatives known. In this form, Ager Ager, Valerian, Citric Acid and other mild laxatives which increase its sufficiency, are added to phenol-phthalein. These little fruit tablets come in boxes of about twenty-five and are the size of a bean. They are mixed with fruit juices and are very pleasant to take. One of these at night is usually sufficient to bring about the desired results or a half one sometimes is all that is necessary to give. They are also very nice to give to children. A half or 1-3 of one would be sufficient for children when in need of a laxative.

I have known cases where Analax Fruit Tablets have been used for years, in cases where the proper elimination could not be obtained with vegetables, fruit, bran and the drinking of plenty of water, without any serious results; and they do not seem to lose their effects or is it necessary to increase the dose as it is necessary in cases of most laxatives.

Understand me, I do not advise the use of these laxatives unless it is absolutely necessary, but I *do*

advocate as an absolute necessity, the prompt removal of all waste from the body, daily. If from any cause, we find a stoppage of this removal, then I recommend the use of the enema. A quart of warm water, about body temperature, in which a little castile or ivory soap has been used to obtain a mild soap suds, is one of the most effective. A teaspoonful of salt to the pint of water, which is about the normal salt solution of the body, is also advocated by some. In taking enema always lie on the right side. After using this warm soap suds water, retain for a few minutes and then follow with another enema of a quart of clear water, a few degrees colder than the first. This enema being a little colder, acts as a stimulant to the mucus membranes of the bowels; and it also washes out the soap and helps to make a thorough elimination of the waste. This is a very healthful thing for everyone to do every week or two at least, for we must remember that the colon is the breeding place for bacteria and it is cause of many dangerous diseases.

Many writers lay special stress on using a more thorough enema, also referred to as an internal bath. In using this, use two quarts of warm water, a trifle warmer than the body heat, then assume a position of the knees with the hips elevated and the hand to the floor. In this position gravity assists in carrying the waste to the ascending transverse and descending co-

lon in flushing out the entire colon. Other writers claim that this is not necessary except in extreme cases, as the ordinary enema described before is ample especially when the warm soap suds water is used first and followed with a quart of clear, cooler water immediately afterwards.

No person must expect to live to an old age and be free from pain and disease who does not faithfully watch and see that there is prompt and thorough elimination of all the waste matter of digestion. It matters not if you follow all the other excellent rules and suggestions; but if you fail on this, you will not have perfect success nor enjoy perfect health. Neglect of this important matter causes auto-intoxication, headaches, loss of appetite, kidney trouble and the poisoning of the entire system with germs and toxins which will slowly but surely undermine their health.

These suggestions about elimination apply with special force to those who have passed middle life. Few people, past fifty years of age, who are not afflicted more or less with constipation. As we grow older the organs of the body do not function quite so perfectly. The secretions of the body grow a little less and usually the amount of exercise is lessened. These and other causes tend to bring on this trouble as we get older and elimination is not so perfect then. Our resistance to disease is not so great and we cannot with-

stand the attack of these germs and toxins if allowed to remain within the blood. If these toxins are allowed to accumulate in the body, they will slowly but surely destroy us, bringing on disease and premature death.

CHAPTER XV.

NARCOTICS

IN a small book of this kind, it is impossible, in fact not necessary for me to go into detail on narcotics. I will simply mention a few of the more dangerous ones.

Perhaps the opium habit is as prevalent as any other form of narcotics used. When this dangerous habit is once fixed upon a person, he is in a very serious condition. Most physicians, as well as many people, are very careful in the use of the hypodermic needle. When suffering greatly from pain in long, lingering diseases, it is quite easy after a time to acquire the habit of using morphine (the active principal of opium) which is a very great calamity.

Many people may be very much surprised to know that the United States consumes far more opium than China or any other country. Recent statistics show that the United States consumes annually 36 grains of opium per capita in comparison with India, 27 grains; France, 4; England, 3; Germany, 2; China, 2; and Italy, 1.

Cocaine is also a very dangerous habit forming drug. Its victims are often quite numerous, more so than is generally thought. Heroin is also another dangerous enemy.

Each and all of these narcotics should be used as little as possible and for as short a time as possible. Many times their use is almost a necessity, but beware of their continued use as there is great danger of the habit being fastened upon one, and when once fastened upon a person, the poor victim is almost hopelessly at its mercy, as it slowly and surely saps his strength, his will power, breaks down his health and robs him of all the main things that life is worth living for.

TOBACCO

Two billions of dollars a year for tobacco; that is our annual bill. This without considering the indirect loss caused by soil depletion, loss of efficiency, ill health and shortened lives. Cigaret smoking has increased 2,000% in the last twenty years. In America today tobacco is produced on over 4,000,000 farms, in spite of the fact that tobacco probably depletes the soil more than any other plant grown. The cigaret was first introduced into this country in 1876 at the Centennial Exposition at Philadelphia. Today we are consuming over 55,000,000,000 factory, or "tailor-made," cigarets a year.

Tobacco is an injury to the human system by reason of the deadly nicotine contained in it. Nicotine is a deadly poison, 1-16 of a grain has caused death. Its action is very quick, much the same as prussic acid. The first effect of a small amount of nicotine is stimulating, then followed by a corresponding or even greater depression, and when taken in large quantities it is accompanied by palpitation of the heart. When tobacco is used in not too great quantities, Nature tries to adjust herself to this poison, just as she tries to adjust herself to many other abuses which we impose upon her by improper diet and lack of exercise. So it is that a great many people who are using tobacco, some of them quite freely, cannot see any injury to themselves. Yet at the same time they are seriously interfering with their heart's action, one of the most important organs to preserve our life and health, and they do not realize this condition until attacked by some serious illness like pneumonia, typhoid fever, or various diseases, and then the heart will give out, showing the abuses it has been putting up with for the previous months or years. The use of tobacco leads to craving for alcoholic beverages. It is a dirty, filthy habit which is often very objectionable to the user's friends and other members of their families who do not use tobacco.

There is a considerable emotional defense for tobacco, but if we may consider the subject through the light of scientific laboratory analysis, and experiment, we find that all of this emotional defense is over-weighed. To quote from an article which appeared in the May 1914 issue of Efficiency Magazine. "As a result of a series of experiments by Dr. A. D. Bush it has been ascertained that tobacco smoking causes a decrease of 10.5% in mental efficiency. There was a series of 120 tests on each of fifteen men in several different psychic fields. The men who volunteered for the tests were all medical students ranging in age from twenty-one to thirty-one years, and of varying previous experience, from the farm laborer to the life-long student. The subjects were attendants at the University of Vermont, where Dr. Bush is an instructor in physiology."

This expression will check up very closely with several experiments which have been made since, at different times, and in different parts of the country in leading medical schools, colleges and universities. In all there are nineteen different substances yielded by tobacco in its different forms of use and not one of these is in any way beneficial to a normal, healthy individual. Included in these nineteen different substances we find furfurol, carbon monoxide and nicotine. It is said that the cigaret smoker inhales less

nicotine than does either the person who smokes a pipe or a cigar, but a much larger amount of furfural is taken into the system, which is fifty times more toxic than alcohol.

My advice to parents is, "Try to prevent your sons from using tobacco." My advice to users of tobacco is this, "Use it in great moderation, and better still stop the filthy habit, because it is doing you an injury although you may not realize it at the present time."

It would be better if you took the money spent for tobacco and threw it into the fire, or better still if you invested that money in some safe way to take care of you in old age. Many like the pipe and think it is the least harmful way in which to use tobacco, others prefer cigars and cigarettes. I consider cigarettes one of the most dangerous forms in which tobacco is used. A number of brands of cigarettes are doped with habit forming drugs and when smoked by boys, and especially young boys, it is intensely harmful to them, much more so than it would be for them later in life.

If you will read carefully in my book where I tell of the enormous amount of work which the human heart performs every twenty-four hours, the equivalent of lifting 24 tons one foot high, you will

readily see the enormous amount of work the heart has to perform when in a normal condition.

How foolish and short-sighted it is of us to voluntarily acquire and persevere in a habit that is seriously interfering with the action of our heart. The calls upon the heart are very great, it never lays down its burden for a moment from the cradle to the grave, it is absolutely vital to our very life and existence, and we are going to need every particle of power that the Lord has given us in this heart. Special calls will be made upon it during great exertion, great mental emotion and especially when we are attacked with some dangerous disease like typhoid or pneumonia. Then we will fully realize that we want all of that surplus strength which we so foolishly discarded and used up in an improvident manner by use of narcotics and stimulants and other grave faults of diet and right living.

“Get the number of applicants for entrance examination the last twenty-five years that have been turned down for “Tobacco Heart” in the United States Naval Academy.”

The foregoing investigation will certainly aid me in trying to impress upon my readers that tobacco causes a serious injury to our health. Its effects are slow and often are not recognized by the one who uses it, but it is surely doing an injury to the one who

persists in its use, especially those who use it to excess.

To those who are a slave of some narcotics or to alcoholic drinks, the most practical thing to do, in fact, about the only successful way to be freed from these terrible habits is to enter some institution who devote their entire time to help those to reform who are a slave to some narcotic. It is practical and I have seen a great many people restored to a normal condition. After one has taken the cure, he should avoid his old associates and form new habits in life and in this way avoid a recurrence of this trouble. In this way, I have seen a great many people who have taken the treatment remain permanently cured.

CHAPTER XVI.

EXERCISE

AS ALSAKER rightly says, "It is well to exercise until there is a comfortable feeling of fatigue. If this is done the heart works vigorously, sending the blood rapidly to all parts of the body, and the lungs also coming into full play to supply the needed oxygen. This acts as a tonic to the entire system."

If you will carefully read my chapter on the human heart in another part of this book, you will readily see how exercise is so necessary to our very existence. The heart pumps blood into the arteries and to the capillaries, but here most of the work of the heart stops. When the blood returns to the heart through the veins, which are twice the size of the arteries, other forces assist in getting the blood back to the heart. The principal forces which assist in forcing the blood back to the heart are exercise of the muscles and deep breathing, as they cause a vacuum, which helps to suck the blood back. There is a system of valves in the veins which prevents the blood from returning to the capillaries and arteries,

and if we exercise and use the muscles of the body, we force the blood through the veins back to the heart again to be sent through the lungs and then to the left ventricle of the heart, which again forces the blood to the extremities of the body. This complete circulation of the blood through the body requires but one or two minutes. As we study the system of circulation the absolute necessity of a reasonable amount of exercise becomes apparent to everyone.

The best exercises are those taken in the spirit of play. If we go at it systematically economize and plan our time, even those of us who are the busiest can devote a few minutes every day to exercise. Practice walking, maintaining an erect posture, head erect and shoulders thrown back. Everyone should walk at least a mile a day. We should make it a practice while walking in the open air to breath deeply—at least one hundred times every day. Often at night before retiring I step out into the free, fresh air and go through a few brief breathing exercises. I find the following very beneficial.

Standing erect, with the shoulders thrown well back, extend the arms by the sides, slowly lifting them until they come together at the top of the head, and at the same time elevating the body slightly on the toes, and inhaling slowly through the nostrils, keeping the mouth closed. Maintain this position for

a few seconds and slowly lower the hands with arms kept straight until they are again hanging at the sides, at the same time exhaling all of the air possible from the lungs. Repeat this five or ten times then repeating a similar exercise only raising the arms straight in front of the body until they are in a perpendicular position, inhaling while raising the arms, and then lowering the hands to the sides, slowly exhaling all the air possible from the lungs. The third exercise is similar to the first described, only the arms are extended horizontally straight in front of the body and as you draw them back to the chest slowly inhale and as you extend them in front again, slowly exhale. This should also be repeated five to ten times.

Another excellent exercise is to stand erect, swinging both arms as far to the right as is possible and then to the left, repeating five to ten times, and then stooping forward until the fingers touch the floor. Still another exercise is to lie flat on the floor or a mattress, face down, feet and arms extended in a line with the body, raising yourself upon the hands and feet slowly from the floor. Repeat this exercise. Another one is to lie on the back and lift the legs to a perpendicular position which brings the muscles of the abdomen into play. The turning of somersaults on pillows or a mattress is also an excellent practice. as it increases the circulation in the spleen and liver,

and the other large organs of the body. The changing of the center of gravity of the body assists in the functioning of the vital organs.

Five to ten minutes devoted morning and night to calisthenics and various free hand movements, including dumb-bells, weights, Indian clubs and deep breathing exercises, are very beneficial. Playing golf, hill climbing, tennis, baseball, handball and working in the garden are all very healthful and are highly recommended for healthy daily exercises.

I think I can receive the greatest benefit in the shortest time by chopping wood for about 15 or 20 minutes every morning. Immediately after supper I nearly always walk leisurely for about half mile or more, work in my garden or perform some other mild exercise. A leisurely walk or some moderate exercise immediately after eating, is, I find, a great aid to digestion.

Don't eat a very hearty meal late at night just before retiring, without any exercise. This throws an excessive amount of work on your stomach and digestive organs, and seriously interferes with digestion, assimilation, and elimination of waste that night. The evening meal, which should be eaten three or four hours before retiring, is practically well digested by then and is ready for absorption into the system so that the entire energy of the body can be devoted to

building up and repairing the wear and tear of the day and eliminating the waste.

“Thou shalt earn thy bread, by the sweat of thy brow,” is another divine injunction, which aids digestion, circulation, and eliminates waste.

Many people may be very much surprised to learn how the blood is distributed throughout the body. I always supposed that the main part of the blood was in the heart, blood vessels and lungs, but the following table which has been taken from a scientific source, will disabuse our mind of this condition. It shows that less than one-fourth of the blood is in the heart, blood vessels and lungs. There is more blood in the resting muscles than there is in the blood vessels and still more in the liver and the portal circulation.

I append this following table for your careful consideration as it is one of the most powerful arguments showing the absolute necessity of proper exercise for without exercise, their stagnation in the portal circulation and in the deep muscles and other parts of the body, which means impaired health, because of lack of nutrition to these parts and still more important the carrying away of the waste of the body.

Quantity of blood in the body 1-13 of weight, distributed as follows:

Spleen,	0.23%
Brain and spinal cord,	1.24%

Kidneys,	1.63%
Skin,	2.10%
Intestines,	6.30%
Bones,	8.24%
Heart, lungs, blood vessels, . .	22.76%
Resting muscles,	29.20%
Liver,	29.30%

CHAPTER XVII.

COMMON DISEASES: FLU, TYPHOID FEVER, TUBERCULOSIS, PNEUMONIA

I WISH to discuss a few of the great dangers that lie in the path of the human race. I have described quite extensively the subject of food, beverages, elimination, exercise and mental condition.

Now, I wish to discuss some of the special enemies that are ever ready to attack and destroy us. First, I will mention the danger of accidents. I have already discussed accidents under the head of "automobile," the enormous number that are killed and injured; also the injury that comes in many other ways. The older we get, the more danger there is of falling and breaking bones, or injuring ourselves severely.

I have known quite a number of people well along in years who were enjoying excellent health, but by accidental falling, some bones were broken, shortening their lives. The bones of the limbs, especially of the thigh, are the most liable to break and cause the most serious consequences.

My mother, at the age of sixty-five, fell—a dizzy spell causing the fall—breaking the upper portion of the thigh bone. We finally succeeded in getting a union and she lived to be ninety-one years old; but she was in bed with a weight on her foot for over six months. She was more fortunate than many others I have known, an accident of this kind frequently causes death in a few months after injury of this kind.

I have known of many cases of injury, causing broken bones, when people would get up at night without a room properly lighted, or conveniently arranged for lighting. A flashlight under the pillow is quite a protection to an aged person.

I have already discussed the danger of eating, and especially of meat and heavy proteins as we get older. I would also especially warn against the use of candy or rich cakes and pastry and the drinking of coffee.

As we get older, our exercise should be lessened, and should not be quite so strenuous as when we are young. But *never* make the mistake of stopping exercise entirely. A certain amount of exercise which is short of causing fatigue is an absolute necessity to a long and healthy life.

The drinking of plenty of water must be kept up. As the organs of the human body begin to les-

sen their activities, the danger is an accumulation of waste, ashes and toxins in the system which will surely cause our destruction.

I would also warn against the dangers of colds that might be neglected. I would advise a fever thermometer should be kept in every family. A rise of temperature, when any appreciable amount, always means danger; but if taken in time, can often be easily overcome and the patient restored to a normal condition. The temperature of the human body cannot vary but a few degrees without causing death.

If we have a fever that carries the temperature about one hundred seven or up to one hundred eight and remains at this high point for any length of time, it is almost sure to cause changes in the blood and death will soon follow. On the other hand, if we have a sudden change and the temperature drops to ninety-five or six, we are very liable to die in a sinking chill without being restored to a normal condition. Hence, this little fluctuation of say—twelve or thirteen degrees is all the human body can stand, and yet the temperature in which we live can change one hundred twenty-five or thirty degrees. Therefore, we should exercise care in the proper clothing and protecting the body against these severe and excessive changes, and also of eating the proper food to

maintain every organ up to the highest state of efficiency.

If a person feels slightly indisposed, a few simple home remedies might be applied, and restore him to health, but if there is much rise of temperature, especially following a pronounced chill, always call your family physician immediately.

Right here, I wish to relate an experience of my wife and myself during the great epidemic of "flu" which swept our Country in the Fall of 1918.

We had been enjoying our usual health. One evening, when I returned from my office, I noticed my wife's face was slightly flushed. I asked her if she was sick. She said, no, she did not feel very sick, but she felt a little feverish.

After supper, I took her temperature and found it was 103°. By this time, only a couple of hours after I returned, she began to feel the bad effects of the "flu." I had her retire immediately, called our family physician and soon had some of her acute symptoms relieved.

By this time, I began to feel that something was wrong in my own case. I took my temperature and found it was 120° and I began to feel badly from the effects of the "flu" poison.

Knowing the great value of a thorough sweat in breaking up many diseases in the initial stage, I

went out into the kitchen, started up a good fire in the range and soon had the room very hot. I took a hot water foot bath and I kept adding the hot water until it reached quite a high temperature. One can thus increase the heat of a foot bath without causing pain, as the hot water is added slowly. At the same time I drank a bowl of hot lemonade; the juice of a lemon with very little sugar in it, and soon began to perspire very freely. I kept this up for nearly a half hour until I began to feel a little faint. Then I rubbed down the surface of my body with towels, put on dry clothing and retired.

The next day, I was able to be around. I did not feel very well, but I was able to take care of myself and wife. At that time, it was utterly impossible to get a nurse or help of any kind. The "flu" epidemic was so severe and so general, that thousands of people were sick. In many cases, whole families, were taken down and unable to care for themselves at all.

My wife remained in bed for over a week and had considerable high temperature most of the time despite the very best medical treatment; but then the acute symptoms began to subside and after this she made a rapid recovery with no bad effects following her attack.

During this time, I ate some food through force of habit, but did not have much appetite, and the food I ate seemed to taste like chips. The food was alright and normal, but the trouble was my whole system was poisoned with the "flu" germ so that none of the organs could function properly.

At that time I developed a severe cough. My lungs have always been first class; but these disease germs had attacked them and my cough was severe and persistent. After a day or two with the best of medical treatment, I began to raise a dark, sticky, tenacious phlegm. After a time, the lungs and bronchial tubes were relieved of this poisonous germ and I began to grow better.

But my case was a revelation to me, and that is why I am describing it to my reader. I watched each step of the development of this disease and I could then understand why the strong and healthy people, and many of our robust soldier boys, laid down their lives from the attack of this deadly enemy which is usually followed by pneumonia.

I am quite certain that if I had not taken this thorough sweat and the other treatment in connection afterwards, I would certainly have had pneumonia and probably a fatal result.

I am now going to discuss a wonderful discovery that was made last winter at the Rockefeller

Institute of Medical Research in which they have finally discovered the cause and isolation of the influenza germ.

Hopes of thousands of sufferers from the epidemic of influenza, for the prevention, or discovery of a cure, have been raised by the announcement of the discovery of the cause and isolation of the "flu" germ. The announcement was made by Simon W. Flexner, Director of the Rockefeller Institute of Medical Research, who attributes the discovery to Dr. Peter Kolitsky and Dr. Frederick T. Gates, all of the Institute.

This isolation will permit experimentation with antidotes and antitoxins. So small is the germ that it must be magnified a thousand times before it can be seen distinctly under a microscope. The germ lodges in the nose and throat during the first thirty-six hours of influenza infection; then attacks the lungs in such a way as to make them susceptible to other germs in the nose and throat.

In describing the terms of the discovery, Dr. Flexner says the effects are of two general classes. First, after the effect on the blood and alteration of the relative number of red and white blood cells, the destruction of one variety of the latter, that is destroying a part of the white blood cells which are well protected, is accomplished.

“The second kind of effects from the germ causing influenza is far more significant and consists of mild injury to the substance of the lung, recognizable under the microscope.” This new bacterium found thus far only in cases of epidemic infection in the early hours of the discovery, is so small that it can pass through the pores of an earthenware filter and when magnified a thousand times is just capable of being seen distinctly under the microscope. It has been given the name “bacterium pneumosintees,” which, when translated into simple English, means that this germ enters the lung tissue in such a way as to produce these serious inflammations to which the names of bronchitis and pneumonia are applied. In health these common bacteria are easily destroyed by the lung tissue, but as a result induced by bacterium pneumosintees, they now are enabled to lodge and multiply in the lungs, thus producing the scourage of inflammation to which the names of bronchitis and pneumonia are applied.

Dr. Flexner says the bacillus has never been found in healthy persons nor in those sick with other diseases. When it is injected into the windpipe of rabbits, it produces effects similar to those seen in human beings in the various stages of the disease.

After discussing more at length this subject of “flu” from my own experience I cannot impress

upon my reader too forcibly the *great danger* of *grip* and "*flu.*" It is not so much the danger at the time of the attack, but the *fearful result that often follows this disease.*

It is often, very often, the forerunner of pneumonia and it often causes that terrible scourge tuberculosis. I have known many cases where it has affected the kidneys, followed by serious chronic diseases. In some cases, it attacks the brain, with serious results. I would suggest a thorough sweat, plenty of hot lemonade, followed by going to bed and staying there until fully recovered, and calling your family physician early in the attack.

In the pores of the average person, we have nearly five miles of little tubes which carry the waste out of the body. If we want to live to be *old and healthy*, we must be sure to keep these pores *well open*. We have cases on record where the surface of a person was painted with varnish, or paint, so that all the pores were closed up entirely, and they could not live but a very short time. The action of the skin is very similar to the kidneys and when the skin does not function properly, far more work is thrown upon the kidneys. If the skin is kept in normal condition by proper bathing and rubbing with a coarse towel, we are not as liable to catch cold.

I have discussed a few of the enemies or dangers that beset us as we get older. Now, I am going to mention three great diseases that stand out prominently which are the main causes of death in adult life.

First is typhoid fever. Typhoid fever is usually acquired from drinking impure water or eating food infected with the typhoid germ. A wonderful typhoid antiserum is now being used very successfully. In the army and navy in a report of the Surgeon General of the United States Army, we learned that in a hundred thousands cases, antityphoid serum was used but one very mild case of typhoid occurred. This is a marvellous result. This serum consists of actual typhoid germs which have been boiled and killed and to which is added a few proper antiseptic medicines. When this is injected in the human system, it arouses what is called the antibodies or all our powers of resistance kept on guard against this enemy. When this germ enters the blood, they are immediately seized by the white corpuscles of the blood and absorbed and destroyed. It causes such an increase in the number of the white corpuscles and their activities that for two years after the injection, there is very little danger of the person contracting typhoid fever. A great prevention of typhoid fever is to boil the water that you are sure is not free from in-

fection. This destroys the germs and makes them harmless. Then a little care in selecting the food that is not exposed to flies or infection is a very good protection against typhoid fever.

To persons who are traveling over the country a considerable part of the time and are compelled to drink water at different places, it is well as a precaution for these people to have typhoid antiserum injected into their systems every two years.

The next most dangerous enemy is tuberculosis or, as it is often called, "The Great White Plague," which reaps a tremendous harvest of human lives every year all over the world. The best protection against this disease that I can recommend is to keep the body in a high state of efficiency, keep the blood pure and well supplied with all the elements for fighting the disease and to nourish the body in every part; care in treating slight colds, avoiding exposure, wet feet, sitting in cold rooms and as far as possible avoid public meetings in which there is a great congestion of people and the room is poorly ventilated; crowded street cars and other forms of locomotion. The best treatment for tuberculosis is, as I have stated, avoid contracting it.

If once contracted, the best treatment is as follows: Complete rest, plenty of pure, fresh air and a generous diet of wholesome food. Some medicine

may be used as tissue builders. The glycerophosphates of lime and soda is especially good; preparations of cod liver oil and phosphates of lime and soda and some other medicines are also aids in curing this disease, but the main hope is to help nature to restore you to health. And right here, let me impress upon my reader that in this disease all doctors agree that there must be the best nourishment given of food which will increase vitamins and mineral salts.

Why is it not a wise thing to use these precautions while we are well and to teach our young people that in the selection of their foods, they choose those building up a body resistance that will be the sure and best protection to them from tuberculosis?

A high dry atmosphere is also an aid in the treatment of tuberculosis. Tuscon, Arizona with an elevation of 3000 feet is an excellent location for tuberculosis patients. There are many other places in Arizona and New Mexico which are also suited to cure this dreadful disease. In New Mexico, the government has a tuberculosis sanitarium for members of the navy who may require this treatment. Many physicians, or those who have passed through the dissecting room, are surprised to find a number of people who have been affected with tuberculosis and

finally recovered from it, and who have finally died from some other disease.

The leading symptoms of tuberculosis are cough, rise of temperature, emaciation and weakness. Tuberculosis usually follows an attack of severe cold or the grip, "flu," pleurisy or pneumonia. Great improvement has been made in the treatment of tuberculosis, by isolating the patient so as to avoid spreading the disease, and by supplying plenty of fresh air, nourishing diet and rest.

In addition to the foregoing remedies for tuberculosis, a new way of using electricity is a very important agent in curing this dreadful disease. It is only within the last two or three years that electricity has accomplished so much in the treatment of tuberculosis.

During the past summer I had occasion to watch a very serious case of tuberculosis treated with this new alpine sun light and the results were most surprising and encouraging to me. This treatment is so important that a statement of how to use electricity, by those who are thoroughly versed in its use, follows herewith. This form of electricity is not only for the treatment of tuberculosis, but for a number of other diseases. I would ask my reader to examine this report from Dr. Wm. B. Welch, of Joliet, Ill., very carefully, as I am satisfied it is very important, as he

has spent considerable time in the study and use of electricity.

“For nearly half a million years man has enjoyed the beneficial effects of sunlight. That is the length of time scientists now estimate the earth to have been inhabited by man, and through all this vast period of time the effects of sunlight have been essential to the sustaining of life and the curing of disease.

“The ultra-violet rays of the sun possess marked chemical properties and are used successfully in the treatment of many conditions, and it has been definitely proven that it improves nutrition of the body and the immunizing power of the blood stream. They aid in the development of the Antibodies and bacteria in the system are destroyed.

“Unfortunately the sun does not always shine. And the ultra-violet rays are absorbed to a very great extent by the atmosphere. But with the advent of the artificial quartz alpine sun light we are provided with a means of treatment in all kinds of weather.

“The class of cases that are especially benefited by the light treatments are Tuberculosis, Anaemia, Skin diseases, Neuritis, Rheumatism and conditions resulting in general malnutrition and debility.

“The generally accepted technique for using the light treatment is to remove all clothing and apply the Deep Therapy light (which is a 1500 Watt elec-

tric lamp in a reflecting hood) over the entire body until it has reddened the skin by bringing the blood to the surface, where it can be easily impregnated with the ultra-violet rays from the Alpine Sun light, and then carried to all parts of the body by the blood stream.

“Electricity can also be used to good advantage in the treatment of Pneumonia, Arthritis and many other maladies by passing a high frequency or heat producing current through the affected area and thereby bringing more blood to the diseased area, discouraging infection and encouraging the healing process.”

And here again, I wish to call my reader's attention to the great necessity of diet, as I read works of our greatest men who now acknowledge the great importance of a scientific balanced ration of proper foods. I wish right here to make a short quotation in regard to guarding health. Probably no matter is of more vital concern to the individual man or woman than the preservation of health. Yet it is a matter to which, as health statistics will show, the average person gives little attention. The common assumption appears to be that health tends to maintain itself, that the body will go on functioning in a “natural” manner until attacked by disease or some kind of serious breakdown comes.

But the body is a piece of mechanism, more delicate in many of its parts than the finest kind of machines. It is geared to do so much and no more; and the limit of endurance or first-class running capacity varies with the individual. Often when warnings of trouble begin to come they are ignored. It is as if one expected a watch or motor car to run indefinitely without examination or overhauling.

The necessity of regular attention to one's physical condition, and the fact that the individual must rely upon himself to bring about that attention, were emphasized recently by Dr. Haven Emerson, Professor of Public Health Administration at Columbia University:

"The health department may protect your water supply, it may prevent contamination of the milk you consume and try to keep you from having smallpox, measles and scarlet fever; but most of the sickness which ends in an untimely death cannot be prevented by the health department."

Prevention of only about 20 per cent or one-fifth of human ills is within the scope of public health authorities, according to the medical department of the Rockefeller Foundation. The remaining four-fifths the *individual himself must guard against or attempt to prevent*. The field for action here consists not simply of observance of the ordinary "rules" of

health in respect to eating, sleeping, regular exercise, fresh air and hygiene; it calls for a connection of the individual with a responsible authority on the important matter of health.

“To prevent the major part of all your sickness,” says Dr. Emerson, “you should go to your family physician at least once a year for a careful, thorough medical examination.” Few individuals apply this simple rule in the case of the most vital matter that concerns them; and yet do not hesitate to apply it in such comparatively minor matters as the examination and repair of a watch or motor car.

PNEUMONIA

Treacherous pneumonia, the most deadly of all diseases, is taking a heavier toll every year. It has been likened to a fierce Apache Indian, always lurking in dark places, ready to pounce upon a victim and lay him low with a swift, sure stroke. The attack is swift, the encounter fierce, and the departure of the enemy, if it fails to slay, equally abrupt.

Great progress has been made in the prevention and treatment of pneumonia, and yet some things are a mystery that have baffled the scientific world for ages. Pneumonia usually takes one of two forms, when it attacks the bronchial tubes usually of children or weak people, and the lobes by far the more deadly

which affect all classes, but especially the robust.

Usually pneumonia follows a severe cold, grip or "flu." It can also follow great exposure, and is especially dangerous after one has become very much fatigued after a great exertion, and has been perspiring very freely, and suddenly this perspiration is stopped and all this waste is immediately thrown into the blood and the other emunctories and carried through the system.

It often follows the giving of an anaesthetic like sulphuric ether; and yet we see it suddenly attack people without any previous apparent causes to bring it on.

It usually attacks one lung. The lower lobe of one lung is a favorite site for starting, spreading to the other lobes and often extending to both lungs. Then it becomes especially serious and we have the dreaded double pneumonia, which in older people, is very liable to end fatally.

By far the most frequent cause of pneumonia is pneumo-coccus, an exceedingly small germ which is not always equally virulent, and with some persons, not virulent at all. In fact, though the germ is probably present in the throat of more than half the people living in cities, by no means all of them get pneumonia. They may be carriers who may carry the germs to those more susceptible, although they, them-

selves, remain immune. Indeed, if all who become temporary carriers of pneumococcus, were to contract pneumonia, the disease would become a more dreadful scourge than all the plagues of Pharaoh, because of its high death toll. Of those who get the disease, about one-quarter die.

A patient may be feeling slightly under the weather. For several days he feels chilly and languid, and these discomforts continue for a day or two without being acute enough to send for a doctor. Then all at once, follows the pronounced chill with pain in the side of the chest, by a continual stabbing which keeps rythm to the respiration. A short, sharp cough adds to his torture and at last they send for a doctor.

By this time, the patient has a high fever and racing pulse. The respiration is much more rapid than the fever warrants, because the breathing is sharp, caused by the racking stabs in the side. Several days before this pronounced chill and severe attack, these germs have been harbored in the air passages for a longer or shorter interval. During this time, the pneumocci, little plants, reproduce their kind in billions, creating poisons which absorb into the system through the circulation. At the same time, the body has been busy with more war preparations.

The first thing the doctor wants to know is the blood count and to find out the relative number of red and white corpuscles of the leucocytes which may have been increased to two, or as many as twenty times the number present in health. A high count indicates a better chance for recovery than is denoted by a small one.

This pleurisy is what causes the stabbing pain at every breath. Soon follows the exudate, or sticky discharge which soon will fill all the air cells and shut off the breathing space of the affected lobe, throwing the whole burden of respiration upon the unaffected areas. This decrease of available air space accounts in part for the more rapid breathing.

In a few hours this exudate changes to red hepatization which is soon followed by white hepatization and the lobes of the lung become solid. If the spreading of this disease is not checked, the lungs soon fill up and death follows very rapidly. Most fatal cases are within three or seven days after the system is stricken with this terrible disease.

At this stage of the disease the heart is bearing an enormous overload. By force of its contractions it must send blood to every part of the body with sufficient force to insure a constant circulation of the stream. An obstruction anywhere greatly increases this pumping work and the pressure of the exudate

causes such obstruction over a large area. Also the heart muscles may be affected by the poisons of the blood, and finally because of the high fever the organ must beat faster. It is not to be wondered that the great majority of fatal cases are directly due to heart failure.

By far the surest and best treatment of pneumonia, and this also applies to tuberculosis and many other diseases, is to continually observe the great laws of health, keeping the body in a high state of efficiency. When we follow these great laws faithfully in the way of food, exercise and elimination of waste, as we find them described in this book, and keep a generous supply of pure blood in circulation, it is by far the surest protection against pneumonia. The danger of the attack of pneumonia is very small if we would follow these great laws faithfully. Proper ventilation of our homes, and especially our sleeping apartments is very essential. Avoid, as far as possible, exposing the body to great chills, or changes of temperature. Avoid excessive use of foods, select only those which are nourishing and the waste from which can be easily eliminated from the body, keeping up a reasonable amount of exercise and be very careful to have the regular amount of sleep and rest. It is an excellent plan, especially in the winter and cold weather, on leaving churches, halls or any form of

entertainment, in which there is a large gathering of people, to blow the nose thoroughly several times and still better after returning home to use a nasal spray or douch with glyco-thymoline, boracic acid or any good antiseptic, for we must remember that infection of these dangerous kinds of flu, pneumonia and other similar diseases is usually through the nostrils, and they lodge right on the little cilia of the sniderial membrane and there is a period of twelve to thirty-six hours of incubation. If we can rid ourselves of these enemies at this stage of their development, we may escape any further injury from them.

The precautions are suggested, especially during the time when flu, grip or pneumonia are very prevalent.

Upon the slightest indication or symptoms of an attack, or better still, when we are feeling indisposed, is the surest time to protect ourselves from these diseases. Very often in early stages, a good, hot bath, or even a hot foot bath, with generous bowl of hot lemonade at the time of retiring, followed with a cathartic, will aid the body in ridding itself of these various diseases. But if, on the next day, we are not nearly restored to our normal health, and feel that we have some fever and are greatly depressed, the surest and best way is to order the family physician, go to bed and stay there, until such time as the temperature of

the body is normal, and you feel back to your usual healthy condition.

Serums are often given in this disease as a prevention, although some authorities do not advocate their use. As we study these great enemies of mankind, that annually reap hundreds of thousands of victims, the force of my previous suggestions and the laws and rules of health I have been striving to lay down in this book become more apparent and important. Remember that bacteria and germs swarm everywhere in the air; but if we keep the body up to a high state of health and efficiency and keep all the organs of the body performing their functions properly, we may have little dread of any of these diseases, because nature will guard and protect us from the attack of all our enemies.

CHAPTER XVIII.

THE SKIN, KIDNEYS AND LIVER

WE will consider these two organs together as their functions are so similar, even their intimate structure is so very similar. Both eliminate a considerable quantity of water, and both remove from the blood, acid and saline substances and various poisons. The hygienic rules of good health are quite similar and may apply to both these organs. If one will take care to maintain a thorough, healthy skin, he will be likely to have healthy kidneys also. Their work is similar. If we neglect the care of either of them so that they cannot function properly, so much more work is thrown upon the other organ.

If the entire skin of a person is painted with varnish that completely seals up all these pores, there have been cases in which serious consequences follow and if this varnish is not removed, death is very likely to follow soon after. Few realize how necessary it is to have the kidneys in a normal condition; for if they become diseased and fail to function for even a few hours, coma soon sets in, which is quickly followed by death. They perform a wonderful function

in eliminating moisture, water, toxins and poisons from the blood. These little filters are very small but each kidney is estimated to be composed of one-half to a million filters microscopic in size. If we eat proper foods in right amounts, and live according to the laws of good health, these kidneys are provided with power and endurance to carry a person through an ordinary life and still perform their functions properly. But when we violate the proper diet and eat excessive quantities of meat and other protein foods, the great amount of work thrown upon the kidneys to eliminate this surplus amount of protein which cannot be maintained in the human system beyond the amount required for its immediate use. Then we have arterio sclerosis, or hardened arteries, high blood pressure and Bright's disease, a disease that is increasing and claiming thousands and thousands of victims. Nearly all this is accompanied by heart trouble as the increased work of the hardened arteries and the blood seriously interferes with this action and soon the muscles of the heart give away and we have heart disease in some of its forms.

Another great cause of the diseases of the kidneys is the eating of excessive amounts of cane sugar which the glands pancreas cannot protect us from, and then diabetes appears, a very serious condition. When thoroughly established, the patient may never see a

real well day again. These two are the principal diseases of the kidneys. Other faults of eating condiments, spices, pepper and excessive amounts of salt, also throw extra work on the kidneys.

When we fail to keep the skin in good, healthy condition, then the work of the kidneys is increased so much more. And let me add right here, that if we would always keep the skin in a good, healthy condition, the danger of colds would be almost entirely removed.

The eating of far too much food, too generous a diet, also increases the work of the kidneys. The drinking of coffee, tea and alcoholic drinks also is injurious to the kidneys. If we wish to have healthy kidneys and live to a healthy old age, we should therefore be very careful in avoiding an excessive amount of meat and other protein foods, also excessive amounts of sugar, avoiding condiments, spices, excessive amounts of salt and vinegar, and try always to keep the skin in a good, healthy, normal condition. To keep the skin in a healthy condition, we should not wear too heavy or tightly woven underclothing. The underclothing should be thin and woven loosely so that the air can reach the surface of the body; but when riding, especially in chilly or cold weather, then great precaution must be taken to protect the body, with wraps, from sudden chills.

Frequent bathing is very necessary and beneficial. Many advocate the daily bath, which is an excellent plan in very hot weather when perspiring freely. In colder weather, two or three times a week is usually sufficient, but the surface of the skin should be rubbed with a coarse towel every night and morning, when it is not convenient to take a bath. This keeps up a healthy circulation of the skin and a stimulant to the nerves with which it is so abundantly supplied.

Many advocate a cold bath in the morning which acts as a tonic. They claim a quick cold bath, not over a minute or two, followed by a rubbing of the body with a coarse towel, is very beneficial, and I know that many people find it such. Personally, I prefer to take a bath just before retiring, a cleansing bath, which must always be warmer than the average body temperature. At the close of the bath, I usually take a little cold water in my hand or on a wash cloth and then go over the surface of my body, and rub down with a coarse, crash towel. I always prefer taking a bath in a warm room. A bath at this time of the day seems to do me more good, the danger of taking cold is almost entirely removed and it has an excellent effect on the nervous system inducing sound sleep and rest afterwards. When not convenient to take an entire bath, I take a foot bath just before retiring and I find it very beneficial.

The skin is remarkably adapted for our protection. It prevents the entrance of bacteria and many other forms of disease. This protection is more forcibly brought to our attention when we have a cut or injury that makes an opening through the skin, through which bacteria or germs of some kind may get into the blood. We often see serious results follow this infection. The outer surface of the skin is made up of several layers of horny scales which form a protective layer which is a poor conductor of heat and electricity, but affords a considerable degree of resistance to bites of insects and cuts and injuries. Beneath this layer is found the active portion of the skin, the gland nerves and blood vessels by which are performed the various functions that are carried on by this remarkable organ.

The sweat glands are the principal glands which are very essential, not only to carry out the waste and poisons of the system, but by their action to cool off the surface of the body during very hot weather. The remarkable functioning of the nerves and blood vessels that are supplied to the skin is all carried on automatically by the subconscious mind and are working for our benefit day and night, and all we have to do is follow a few general laws of good health and nature takes care of the rest. If perspiring very freely, in the summer and we should go into a cellar, the

cool air feels delightful to us, but it is very unhealthy to stay there any length of time. The sudden stoppage of all of this waste of the body, throws a great amount of work upon the kidneys and bowels. After great exertion, or becoming very warm, or perspiring freely, a tepid bath, followed by a thorough rubbing of the skin is an excellent way to escape trouble or danger of colds. If this is not practicable, walking gently or moving around some so as to cool off gradually, is a good plan; or if riding, an extra wrap should be used immediately. In fact, it is not a good plan, when perspiring freely, to take a ride in an automobile or any open vehicle.

It is surprising as to the extent of the walls of these tubes, the sweat glands, for they would cover a surface of ten or eleven thousand square feet. The average person has about five (5) miles of these sweat glands, which should be kept in excellent condition. It is an excellent plan at night to remove all underclothing worn during the day and hang it up where it can be thoroughly aired and dried and the same to be applied to the clothing worn at night in the morning, to allow these to hang and air during the day.

Remember a thorough rubbing of the skin with a coarse, crash towel, as we make these changes, is also very healthy and beneficial.

There is an old and trite saying, "A man is no older than his arteries." Many people who apparently are in the best of health, are very much surprised when taking a thorough physical examination to find they have high blood pressure. This is one of the first symptoms that appear to warn us that we are not living right. We are in some way outraging nature's laws. Remember the Lord gave us but one beverage and that is Water. *Drink freely of it.* It is necessary to good health. It will help to wash the poisons and toxins out of the system and help to flush the kidneys of the poisons in their constant efforts to protect us from disease.

LIVER

The liver is a very wonderful organ and its proper action is absolutely vital if we hope to maintain good health. Under the head of "Digestion," I have spoken more fully of the offices of the liver and its secretions and excretions, the wonderful work it does.

I just wish to add a few words here in regard to the diseases of the liver and the care of the liver. The liver is not near as subject to disease as the kidneys; and we will have very little disease from the action of the liver if we only observe the right diet.

The liver cannot handle cane sugar as well as grape sugar and the sugars made from starches.

Hence, much of the liver trouble of today can be traced to the eating of excessive amounts of cane sugar and other improper foods which seriously interfere with its functions, causing gallstones, an obstruction of the gall duct which often requires a serious surgical operation. The drinking of alcohol in some of its forms seriously injures the liver. When one persists in eating foods that seriously interfere with the normal action and functions of the liver and kidneys, it always brings on serious injury to the one who transgresses these great laws of diet.

CHAPTER XIX.

THE PANCREAS AND INSULIN, THE NEW TREATMENT FOR DIABETES

THE pancreas is another very important organ. I have described quite fully the office of the pancreas and the external secretions of the pancreas which are poured into the intestines and are very necessary in completing the digestion of food in giving what is sometimes termed as a once over again action, aiding the work of the saliva, gastric juice and bile.

Besides this external secretion of this very important organ, pancreas, it has recently been discovered that it has an internal secretion which has been termed insulin, a name derived from the Latin word "Insula," meaning island. This substance has been given this name because it is produced in that part of the pancreas called the Islands of Langerhans, after the discoverer. Diabetes mellitus is a disease of the pancreas. It results when the Islands of Langerhans do not produce sufficient insulin to protect us from cane sugar. Wrong diet is the main cause that prevents the proper functioning of this gland.

It has recently been discovered that when this internal secretion can be taken from some animal, usually a sheep, and injected into the blood of a diabetic patient, diabetes is counteracted for the time being. It is indeed a wonderful treatment for this dreaded disease, but it is not a cure, since the cause of diabetes has not been removed.

Dr. William S. McCann, of Johns Hopkins Medical School, says, "The most that can be said for insulin is that it is a specific remedy for diabetes which restores the metabolism to normal as long as the treatment is continued. In some cases, the beneficial effects may continue for a short period after discontinuing the treatment but sooner or later, the patient always returns to the condition, preceding the treatment, unless it is resumed."

This secretion, insulin, was discovered by Doctors Banting and Best, working in the Laboratory of Dr. Macleod, of the University of Toronto, who succeeded in isolating it from the pancreas of the ox.

Since the discovery of insulin, a little over a year ago, much progress has been made in the physical study of its preparation. First, some exaggerated statements were made of its value as a remedy for this disease, claiming it was an absolute cure, but this, we find is incorrect. It is a good remedy and assists as long as it is given to the patient. It has no effect if taken

into the stomach. It must be injected directly into the blood in order to obtain any of the benefits of insulin.

When diabetes mellitus attacks young people, the results are very grave indeed, because the hopes of recovery are very slight. When it attacks older people, the advance of the disease can be checked by careful diet and living. They may live after its attack, for a number of years, but when a young person has a severe attack of diabetes mellitus, they have little chance of ever seeing a well day afterwards.

I wish to quote right here from an eminent authority, the following: "The ultimate end of one who has had excessive doses of sweets, candies, cakes, rich pastries, syrup, etc., for a continued length of time, wears out the function of the gland pancreas which enables the body to take care of sugars. Not only in limited amounts for long periods, but no sugar can be taken at all. This complication is an organic disease; called diabetes mellitus. This disease weakens the body strength, to such an extent, one can never see a well day afterwards."

My reader may recall that under the head of "Cane Sugar," I quoted an eminent doctor of New York City, who claims that the number of people afflicted with diabetes mellitus has been doubled in the last five years, since the prohibition amendment

came into force. Formerly, there were about a million people in the United States afflicted with diabetes, and now he claims this number has been doubled, or two million people, who are sick with this disease, and he claims it is due, largely, to the enormous increase in the consumption of cane sugar which is a quick stimulant and quite similar to alcohol in its effect.

I trust my reader can now see the reason I have condemned in strong terms, the excessive use of cane sugar by the American people. When we study this subject from all angles, gathering the opinions from the greatest men in the country, can there be any doubt in my reader's mind of the injury by the excessive use of cane sugar?

All doctors agree that when diabetes mellitus attacks a young person, it is still more dangerous than when older people contract this disease.

I not only wish to call my reader's attention to the enormous increase of diabetes but I wish to warn them of the hundreds of thousands of children whose health is being undermined by the excessive use of cane sugar. Many times the ill-effects of cane sugar are not apparent, but serious injury is being done to the pancreas and the kidneys, slowly but surely injuring the functions of these two important organs.

The small candy stores have sprung up all around our large schools to tempt the small children to buy sweets of all kinds, just as we formerly used to see saloons located near the gates of great manufacturing plants. Teachers in some of these schools have told me they have noted the serious injury to the pupils who eat much candy while attending school, and some of these teachers have made rules prohibiting the children to go to these candy stores during school hours, but of course, the authority of the teacher ends with the school hours, and then the pupils will find means to buy this candy before or after school. If parents and teachers will but substitute and teach their children to buy raisins and fruit instead of candy, it would be so much better for their general health.

When insulin is used as a remedy, a strict diet is as necessary as ever in this disease. I would impress my reader's attention with this serious thought,—We came into this world with one stomach, one liver, one pancreas, one heart, two kidneys and *every one of these vital organs are absolutely essential to our very existence. If anyone partially gives out, our health is seriously impaired* and do not forget this sentence: “When *one* of the body's organs has become more or less destroyed, *it is not an easy problem to rebuild it.*” “A chain is no stronger than its weakest link.” *Our future life is seriously impaired, our length of days*

is greatly reduced and our service to our friends and family and community is almost entirely removed. The amount of pain the human body can cause us, is scarcely appreciated or thought of, by those who enjoy good health. Good health is something like our friends, we do not miss them until we lose them.

If we have some particular friend who we can see frequently and often, we think little about it, but if this friend dies or goes away, what wouldn't we give if we only had an opportunity to visit with them again, even for a short time. Permit me to again repeat that *diet is one of the most important things of life*. Dietetic sins bring on diabetes, bright's disease and heart disease, cancer and many other diseases and it is one of the leading causes that help to shorten and make life more or less of a failure. Is it not of sufficient importance to give it our personal attention and be free from all these diseases and to build up a strong, rich blood circulation that will protect us from nearly all forms of contagious diseases.

It is this principle that has impelled and spurred me on to write this book, and I wish to call the attention of my reader especially to the advantages of it, especially for our boys and girls. Let them get started right before there is serious injury to the pancreas, to the kidneys, to the heart or to some other vital organ, which may not show up for a number of years

afterwards, but the foundation is certainly laid for a break-down later in life, when the heavy work and competition of life comes upon us and the struggle for existence and bread becomes harder and harder as it certainly will in the years to come.

CHAPTER XX.

THE AUTOMOBILE

THE enormous increase in the number and in the use of the automobiles by the American people forces itself upon our attention, and makes it necessary in a work of this kind to point out some of the many advantages and delights in its use and also to call attention to the danger and abuse of this much used vehicle. Its use and abuse has a powerful bearing upon our health and length of life, and this impels me to speak briefly upon the subject. When we realize that there is in this country one automobile for every two families, and in California one for every family, we cannot help but appreciate the vital influence that the automobile industry must have upon each and every one of our lives.

Few people stop to think of the economic side of the automobile. The American people are spending eight billion dollars annually upon automobiles. The depreciation upon automobiles is almost two billion dollars per year; this money practically wasted. It is driving the interurban and street car out of business. It is stopping the building of new railroads.

The expenditure of money for railroad building or extensions has been practically at a standstill for a number of years, although the population and business activity of the country has not at all decreased. Where is this money coming from? What would this eight billion dollars have been spent for had it not been spent for automobiles? This, with apparently a very slight change in the mode and habits of living of the people, and we may assume from this that it is due to the increase in wages since the war, and to the general elevation of the standard of living.

To many the most serious side of the economic consideration of the automobile lies in this fact. The greater part of this money is spent for pleasure alone and does not bring any substantial or lasting benefits. The pleasure of owning and using a car is so attractive that it is difficult to withstand the temptation to purchase one, even though the prospective buyer be in very poor circumstances. Some of our best authorities claim that at least half of the cars sold are purchased by people who can ill afford to own and stand the upkeep of an automobile. A large number purchase automobiles before they have homes, others mortgage their homes to buy automobiles, and still others purchase automobiles who are still owing a considerable portion on their homes, and the owning and upkeep of an automobile seriously interferes with and

retards the day when they may own a home free from indebtedness.

The use of the automobile has quite an important influence on the health and length of life. If used judiciously when the weather is pleasant, it is very enjoyable and healthful, but if used recklessly, driving long distances in chilly weather, it is a serious handicap and endangers health.

While we have mentioned just a few of the serious objections to the automobile we must also speak of its many advantages. It has become an absolute necessity to the physician, in that it permits him to reach the very sick and injured in an incredibly short space of time. It enables people to visit many places of interest and gives them delightful sight-seeing trips and the like, which might otherwise be denied them, and as our roads and highways are being improved very rapidly, it enables more and more people to visit far distant parts of our country, traveling from sea to sea and from Canada to the Gulf. I believe that the time is not far distant when more and more people will use the automobile to go South and the warmer climates in Winter, and to go North in the Summer, somewhat as the birds instinctively take their flight in accordance with the change of the seasons.

The question comes up, "When will we reach the point of saturation?" Time alone can tell. Since

1917 auto experts and authorities have been looking forward to, and setting a time when this point of saturation would come, but still in 1923 it seems as far distant as it did in 1917, keeping ahead of us, as it were, like a shadow in front of us. While discussing this subject I can not refrain from sounding a note of warning in regard to the dangers and the number of automobile accidents, which are increasing at an alarming rate. Statistics indicate that in the year 1923 the number of deaths by automobiles will exceed 15,000, which averages a death every fifty minutes; and those injured in these or other automobile accidents, it is stated by insurance companies, will exceed one million seven hundred thousand, almost 2% of our population. The above figures are in large part to be listed as a toll that the nation pays to carelessness on the part of motorists and pedestrians, for most automobile accidents are avoidable. The great majority of them are attributable to speeding, to careless driving, to joy riding, to intoxication while at the steering wheel, to failure to exercise proper care as to brakes and safety appliances, to lack of care on the part of pedestrians and to many other causes, most of which are directly attributable to carelessness in some form. The above figures should drive home to all who use the public thoroughfares and highways the need of exercising proper care. To this enormous

list of those killed and injured must be added the terrible loss suffered by the families of those killed and the pain, the anguish, and the loss sustained by the injured, and there is also the loss of property that is to be figured. One killed in automobile accidents every fifty minutes, two hurt every minute, that is the present rate. Let motorists and pedestrians think of these figures and realize the terrific cost of carelessness.

The automobile presents to us a very grave menace in not taking the proper amount of exercise. One author has treated the subject like this: "What is the cause of the increase of *avoirdupois* among our business men?" The answer is, "Ambitious jaws, lazy feet, and gasoline." Let me give you an example of many business and professional men. They arise rather late in the morning, hastily eat their breakfast, consisting perhaps of coffee and rich foods, light a cigar or cigarette, step into their automobile and rush to their office or place of business. At noon they again step into their car, rush home, probably eating a hearty dinner with more meat and richer foods than are really good for them, again step into their car and go back to their place of business, and this is again repeated in the evening. Apparently, a man going through this routine is looking fine, in fact, he is getting too fleshy, but in reality he is stacking up a lot

of trouble. He takes practically no exercise, he is eating far too much food, too rich food, and too great a variety of food, and he is smoking too much tobacco. Just watch this case for a few years, and something is going to happen to this man. High blood pressure, heart trouble and many other diseases are liable to attack him at any time. He is throwing too much work upon the heart, it is impossible for the emunctories to rid the body of the excessive waste and an early breakdown and premature old age are inevitable.

Let me warn people of this class that they should take some exercise every day if they wish to remain in a good state of health and be free from pain and disease. Often my friends ask me if I have an automobile or if it is in running order and I answer, saying, "Yes, I have an automobile and keep it in excellent condition, but I feel so much better when I exercise that I make it a habit of walking, usually three or four miles a day." Every business man should walk at least two miles a day or take some other form of exercise daily.

To my mind the sedan or closed car is the coming car. We all know that it is unhealthy to place ourselves in a position where any one part of the body is subjected to a direct or constant draft. When any part of the body is subjected to a direct draft the blood in this part of the body thickens or coagulates, circu-

lation is impaired, congestion takes place and the result is a cold, rheumatism, neuralgia, or other petty ills which are the result of congestion. Yet, we have exactly the same result when riding in an open car, and it is intensified when moving rapidly. People are beginning to learn this, and it is for this reason that the popularity of the closed car has increased so rapidly in the past few years, over 50% being sedans in many leading types of cars.

The American people today are living too fast. They are under too high pressure all the time. The fierce competition of business, the social whirl, the late hours, the luxury and dissipation that come with the accumulation of wealth, and the immoral movies, added to the use of the automobile, are carrying many of our young people into moral ruin. They go too fast. They scarcely take time for their meals or for sleep, but rush from one thing to another under this high nervous tension, and then they step into their automobiles, and the forty or fifty miles an hour, only adds to these disturbing influences.

Few of our young men today, who are the sons of business or professional men, have the moral stamina, good habits and a good constitution to carry on the business of their fathers, and many of our young women are not as capable of taking charge of a house and

making an ideal home as their mothers were, which is the very foundation of our Great Republic.

There is a time to work and a time to play. I write this note of warning to parents, so that they may try and instill in their children the necessity of right habits of thought, and due observance of the laws of health.

Too much ease and luxury debilitates, destroys and breaks us down. We need more of the pioneer spirit of our fathers and mothers, who had to meet and overcome all kinds of difficulties, and in this way develop a good, sturdy character.

CHAPTER XXI.

MOUTH HYGIENE

DR. HARVEY WYLIE claims the mouth is the most important organ of the human body. In fact, most authorities agree that much of our infection is taken into the human system through the mouth and nose. The importance of mouth hygiene has been greatly emphasized during the last few years as our greatest men begin to realize that the condition of the mouth has a powerful influence upon the health of the individual.

A great deal could be written upon this subject; in fact, whole volumes almost, are devoted to it; but I wish to give some of the main important points that are necessary to be observed: First, the teeth should be cleansed thoroughly three times a day, after meals. By far the most important time to clean the teeth is after supper, some time before retiring. The teeth should be thoroughly brushed at night before retiring for if any particles of food are left around the teeth during the night while the mouth is at rest for eight or nine hours, fermentation will take place as the mouth is in a warm, moist condition all of which are favorable conditions of fermentation. While during

the day if a little particle is left around the tooth, it is often removed by the lips or tongue, or by drinking something, or by eating more food; while at night these particles remain in the same position. Hence, I always impress on my patients the necessity of a thorough cleansing of the teeth at night before retiring. They should also be cleaned after breakfast and dinner.

Occasionally, I have patients who brush their teeth too long and too vigorously, and irritate their gums, and cause them to recede, especially over the upper cuspids and bi-cuspids. Cleanliness is the only object of brushing the teeth and any brushing after this end is reached, is a waste of time, and irritates the gums and we must remember we should keep the gums in a healthy condition. The teeth should be brushed up and down and at right angles to the teeth, being careful not to irritate the gums, especially when brushing up and down.

I like to have the expert who takes an X-Ray, give his written opinion of each tooth that appears diseased. This is an aid to us in deciding on the right course to recommend, as we examine the patient's mouth.

The X-Ray is only a shadow picture, and let me warn my reader, here is where many grave mistakes are made and many useful teeth sacrificed.

There is very little chance of making a mistake in a typical abcess, as the portion around the end of the root is so dark and well defined. But in those cases where there is a very slight change of color around the end of the root in the tooth, is where the danger of making a mistake lies.

A tooth may have been treated, and in a perfectly healthy condition, but if it shows a slight change of color, due to its former condition, some physicians are so radical they recommend the removal of all dead teeth; but this is wrong. I have been practicing dentistry for many years and have had an opportunity to study this subject and watch the teeth I have treated, and had many X-Rays made of them, and with very rare exceptions, I have found the teeth and roots in a healthy and normal condition.

While I try to be conservative and not sacrifice healthy, useful teeth, I am one of the first to recommend the removal of badly abcessed teeth, especially of long standing; and also all diseased conditions of the gums, pyorrhea and all other forms of inflammation that may have extended to the point of suppuration, for all such teeth should be removed. I have seen many cases where, after this class of teeth have been removed, there would be a marked improvement in the patient's health in a few weeks afterwards, and later on, when the gums had settled down, and I have

fitted them with plates so they could masticate their food properly, I see a still greater improvement in my patient's health.

A few years ago, we did not fully realize the importance of mouth hygiene and of watching and correcting these conditions in the mouth of our patients. Now we have learned that these diseased teeth are very often a source of slow infection which gradually but surely impair our patient's health.

We should visit our dentist at least twice a year and have the teeth thoroughly cleaned and all the tartar removed, and a careful examination made to see if there are any signs of decay. If there is any decay that is started, in this way the dentist will discover for us and we can have the teeth filled while the cavities are small, and this is the condition in which all dentists prefer to do their dental work. If teeth are filled when the cavities are small, the work can be done with less pain to the patient and the danger of a nerve dying, because of close proximity to a large filling is entirely removed.

If at any time the patient's health seems to be impaired and no apparent reason can be found, then it is an excellent plan to have an X-Ray taken of the teeth, especially if the patient has any teeth that have been devitalized and the roots filled. This devitalization and filling of roots of teeth is a *very difficult*

part of dentistry. Perhaps not over half of the dentists are capable of doing this work successfully. If this work is not done quite perfectly, there may not be any pain to the patient or discomfort of any kind, but if *all* the *nerve* is not removed after the treatment and the root is not filled to the *end* of the *apical* foramen there is sure to be trouble with this treatment and a blind abcess is likely to form. The easiest and best way to disclose this is by having an X-Ray taken. The X-Ray is a wonderful help to the physician and the surgeon, but like many other wonderful discoveries, sometimes some physicians go too far in its use and are too radical in its application. Some physicians will order a patient to have all of his teeth extracted because of some slight ailment, the cause of which he is not able to discover in his patient, as rheumatism, neuritis and many other diseases. So some of the dentists have to act as a barrier to preventing the wholesale extraction of sound and useful teeth that are in no way to blame for the patient's illness.

I will simply describe a case I recently had in my office. A man of about thirty-five years of age came to me to have me make two plates for him. I asked him the reason he had lost all of his teeth at his age, and his answer was that he was working in Chicago, and had an attack of rheumatism. He went to a

physician who looked him over and said his teeth were the cause of all his trouble. He had neglected his teeth some and there was quite an accumulation of tartar, but otherwise his teeth were in a healthy condition with possibly one or two exceptions. The patient thought it was necessary to follow this physician's advice, so he visited a dentist and had all of his teeth removed; but he still had his rheumatism. He visited another physician who inquired into his habits of life, and his diet, and discovered he was eating too freely of meat and rich pastries. He told him how to correct his diet and live on plain, wholesome food, with very small amounts of meat. He gave him a diuretic, acetate potassium, to slightly stimulate the kidneys and carry the urea and uric acid out of his system, and in a very short time, his rheumatism was gone, but the poor man's teeth were also gone.

I merely mention this case as a warning, and when a patient comes with these troubles, it might be well to first look into the other causes of these diseases, and then if the trouble still remains, after proper medical treatment, to have an X-Ray taken and find if there are perhaps two or three blind abscesses with pus at the end of roots of the teeth which make a slow form of infection which is drained into the system.

In brushing teeth, it is well to use tepid water and some good toothpaste. There are quite a number of

varieties of tooth paste upon the market today. As usually manufactured, the tooth paste and tooth powder are quite similar in composition only put up in different form; but the tooth paste is a little more convenient to use because it does not soil the clothing as easily as the powder does.

Ten or fifteen years ago, we had quite a number of good preparations of tooth powder. Since that time many new varieties of tooth paste and tooth powder have been placed on the market. Many of them are very highly advertised and recommended. The varieties of paste and powder used a number of years ago were very good but not quite strong enough. Those that have been placed on the market in very recent years, I consider too strong for use in the mouth. I have had a number of patients complain of the irritating effects of these modern tooth pastes on the gums, and I do not consider it advisable to use these strong preparations.

I get the best results from the use of Sanitol tooth paste, as I think it keeps my mouth and teeth, and also many of my patients' teeth, in most excellent condition.

There are many good preparations that can be used as a mouth wash. Lavioris is a very popular preparation and a very good one to use as a mouth wash. A ten per cent solution of glyco-thymoline diluted with

warm water makes an excellent mouth wash. There are many other preparations that are also considered very good as a mouth wash.

We should thoroughly masticate all of our food, not alone for the reason that it is necessary in order to start digestion properly and have the food thoroughly mixed with saliva, but it also aids us in keeping the teeth clean and in a healthy condition. Like the other parts of the body, the teeth should be used regularly for it helps us keep them in a normal, healthy condition. We are all prone to use only one side of the mouth in masticating the principal part of our food. This is not a good habit. We should practice using both sides of the mouth, and in this way, keep all our teeth and gums in a healthy condition and at the same time divide the work up equally with all the teeth in the mouth.

It is not a good plan to chew gum very freely or long at a time. It causes an excessive flow of saliva which is liable to be taken into the stomach at times when it is not needed and may also slightly interfere with the digestion. It also over-stimulates the saliva glands.

I sometimes chew a piece of Beeman's Pepsin Gum for five or ten minutes after dinner, or after supper, (and then discard it somewhere in a place no one can step on it and inconvenience them.) If we chew gum

for a few minutes right after a meal, it will cause an increase in the flow of the salivary ducts at a time when it will slightly aid digestion in the stomach, especially if we haven't taken quite as much time as we should in masticating our food.

In about ten or twenty minutes after we start eating a meal, the gastric juice begins to be secreted in the stomach and before this secretion becomes sufficiently abundant, the extra saliva may help in the digestion; but when there is a considerable secretion of gastric juice and the stomach becomes strongly acid, this stops all the starch digestion performed by the saliva.

The importance of mouth hygiene is coming into its own, and its real value is acknowledged by all our best authorities. The services of the dentist is very important in keeping up the health of a community, but I think by far the greatest service we can give, is to the children and young people.

A child's first teeth should be looked after at least twice a year. If small cavities should appear, they can be filled and these teeth retained in the mouth, to not only be of service to the child, which is important, but a still greater service is given to that child later in life. Those who have studied deeply into this subject find that if the first teeth are retained until the proper time of the eruption of the second teeth,

the second set of teeth comes in far more regular, so that the articulation and the masticating power of the person is almost doubled during the remainder of his life. While if the first teeth are extracted too soon, as it is often necessary to do to relieve pain, the next teeth come in very irregular and in a crowded position, and the upper and lower teeth do not properly come together so as to produce the best grinding and masticating power, which is of great service to the child from the ages of six to fifteen years. And during this time the permanent teeth are all erupted, with the exception of the four wisdom teeth, which are irregular in coming, usually from twenty to thirty years of age and are not near as valuable as the other twenty-eight teeth are.

Many people do not realize that the permanent teeth appear in a child's mouth at about six years of age *before losing any of his first teeth*. There are two lower six year molars and two upper six year molars, and these come in *right behind the first teeth*, which are only ten in each jaw.

Here again we see a wise provision of our Creator in having these six year molars erupted just back of the first teeth. The two lower six year molars meet in perfect occlusion with the two upper six year molars and act like four posts to hold the child's jaw in place and give him masticating

power while he is losing the balance of his first teeth. These six year molars coming so early in life are more liable to decay than those which come later, but I think that of all the teeth in the head, the six year molars are probably the most important for masticating purposes. There are weak spots in these six year molars like all molars, where the fissures are on the surface; sometimes the union of the enamel not being perfect, this little depression forms a lodging place for the accumulation of food, and decay is very liable to start at this point. If the child is carefully watched by his dentist and taken to his office at least twice, and in some instances three times a year, if these weak spots begin to show signs of decay, they are very easily filled with very little pain and the balance of the tooth will often last a lifetime.

As the child grows older, the teeth become harder like the bones of the body, especially if he is fed upon the proper food that is rich in calcium and other mineral salts.

Right here let me impress on my reader, that this point will show the importance of proper diet and living. Then if this child visits the dentist twice a year for the next ten or fifteen years and has his teeth carefully cleaned, and if there are any small cavities to have them filled, and he will brush his teeth morning

and night and after each meal, he need have but very little decay and rest assured that he will preserve his teeth as long as he lives. By following the above directions, a person need never have any tooth ache; and, my reader, please remember this one fact, when decay starts, it is never stopped until the tooth is either filled or extracted.

By taking good care of your teeth, you not only protect them from decay, but also from attacks of pyorrhea which come later in life and which is usually due to the neglect of the teeth, allowing the tarter to gather in considerable quantities. This acts as an irritant to the gums which shrink back and more tartar is deposited, and this process is kept up until there is so much inflammation that often pus pockets are formed and the patient is on the high road to pyorrhea and loss of his teeth.

I have already mentioned the great service we can be to a community, especially to children and young people, and I wish to impress on my reader, the supreme importance of taking their children regularly to a competent dentist and beginning quite young.

The six year molars are the first permanent teeth and are very liable to decay, but the early and frequent visit to the dentist with the child can prevent the loss of these important teeth. Few realize

what a loss it is to a patient to sacrifice one of these teeth. Knowing the value of these teeth, I would not take a Hundred Dollars apiece for these important teeth.

If a young person loses one of these six year molars, they practically lose the use of the six year molar that meets it, and also suffer not only the loss of the use of these two teeth, but that side of the jaw is never in first class condition to masticate food properly. The loss of this tooth leaves a space which allows the food to drop down and irritate the gum and greatly curtails the masticating power of this side of the mouth. To masticate the food thoroughly, there should be four or five teeth that meet in perfect occlusion arranged side by side. This gives so much more continued service for masticating power which grinds up the food much more perfectly.

CHAPTER XXII.

CLOSING SURVEY

IN this closing chapter or survey of the subject, I wish to ask my fair-minded and impartial reader if I haven't shown that it is a practical thing to carry out the subject of my book, "How to Live a Hundred Years."

I have given a number of remarkable examples of people who have not only lived a hundred years, but many of whom have lived much beyond a hundred years; and one who indeed reached one hundred and sixty-nine years of age. Then if I trace this thought through the next few chapters of my book, my reader will see how I have divided the subject under several headings, making in all twenty-two chapters.

I have spoken of the food, most important of the entire subject. I have also spoken of the other great requirements for living a long and healthy life. I have described the food, the beverages, the exercise, and the necessity of keeping in a proper mental condition. I have also spoken at length about elimination, how *absolutely necessary it is to keep the ashes*

and waste promptly removed from the system. I have spoken of the necessity of sleep, and throughout the book, I have emphasized the importance of leading a temperate life, in describing the lives of these old people. This one subject has been dwelt upon by all of them: to avoid all excesses, all irregularities, to lead a temperate life, and to avoid upsetting or interfering with the harmony of the workings of the human body.

Remember my quotation from Dr. William Mayo, one of the greatest men in the medical world today, who recently stated that but one-fourth of the operations of the human body is under the direct control of our will. The other three-fourths is carried on by this subconscious mind, and when the human will tries to seriously interfere with the operation of the other three-fourths of the authority of the body, trouble is sure to arise. Then towards the latter part of my book, I have warned of the dangers of accident, and especially falling, and have spoken at some length of the great and dangerous diseases that carry off so many hundreds of thousands of people each year.

I have given a short description of these diseases and a few of the means of avoiding them and I have also dwelt on the necessity of early treatment

of these diseases by calling the family physician at the first stage of the attack.

I give below a list of the books and authors, from which I have gathered a part of the material for this book. Hoping it will be of interest to some of my readers to study more fully the details of this very interesting and important subject of health. I would add, they are all valuable and useful books, which are well worth your time to read and study. I would first mention, "Textbook of Physiology," by Howell, 6th edition. This is a very fine Physiology of one thousand pages and is used by some of our best medical colleges. "Medical Chemistry and Toxicology" by James W. Holland, 4th edition. This is a very valuable technical work, but of little value to any but the trained investigator.

"Not By Bread Alone," by Dr. Harvey Wiley, is a very valuable book of 374 pages. This is a practical work, and I recommend it to all my readers. Dr. Wiley also published three small books, of 230 pages each, entitled "Wiley's Health Series," Nutrition, Hygiene and Physiology, Volumes 1, 2 and 3. These are written in a plain, simple style, especially for young people. Another book of Dr. Wiley's is called "100 Tests of Foods & Beverages," which is useful as a reference book.

“Starving America” by Alfred W. McCann is a valuable book of 270 pages. It forcibly shows how the food of the American people is prosessed, demineralized, denatured and robbed of it’s most valuable and healthful qualities. “The Science of Eating” is another good book of 400 pages by Alfred McCann. These books are very valuable and should be read by all. “Old Age Deferred,” a book of 480 pages, is written by Arnold Lorand, of Carlsbad, Austria. Dr. Lorand is also author of another book entitled “Health Through Rational Diet,” a book of 430 pages. These books are very valuable, carefully written, showing a large field, the sources of his authority, and represent the thought of some of the most noted European authorities. “How to Live” by Irving Fisher and Eugene Lyman Fisk, a book of 440 pages, gathered from a wide number of authors, 15th edition. This book should be widely read.

Dr. John H. Kellogg’s book, “Life” and also his “Good Health Magazine,” are very interesting and valuable books. Everyone should read them. “Maintaining Health” a book of 411 pages, by Dr. R. L. Alsaker, is an interesting, well written book, published in 1920. “Milk Diet” by Foster, described in detail how milk should be used, when needed for an exclusive diet, for a few weeks. “Diet & Health” with a key to the calories, by Lula Hunt Peters is a

small book, which is considered a high authority on calories, and how to properly maintain a balanced ration. "Ten Little Lessons on Vitamines," these ten small books of 32 pages each, by Eugene Christian, containing valuable information in regard to the vitamins and mineral salts contained in many of our foods.

In this chapter, I wish to gather a list of the things to do and also a list of things not to do, under the head of "What To Do" and "What Not To Do." My object is this; we have many splendid books written upon health subjects, but most of them are so long and profuse that many people get lost in a maze of health suggestions. Therefore, in the compass space of a few pages, I wish to write something that my reader can refer to and see at a glance, the important things that are necessary to maintain a high state of health.

WHAT TO DO:

1. Select a balanced ration.
2. Select foods rich in vitamins and mineral salts.
3. Drink plenty of water.
4. Cultivate cheerfulness.
5. Take plenty of exercise.
6. Get seven or eight hours of sleep.
7. Practice regularity of meals, exercise and retiring.

8. Be temperate in all things.
9. Prompt daily removal of all waste and ashes of the system.
10. Plenty of milk, vegetables, whole wheat bread, nuts and fruits. Also shredded wheat biscuit and Ry-Krisp Crackers.
11. Massage thyroid gland daily.
12. Live in the Open Air and Sunshine.
13. Cultivate deep breathing.
14. Daily bath or rubbing down with a coarse towel.
15. Retire at 10:00 P. M., Arise at 6:00 A. M.
16. Mental work prevents premature senility.
17. Wear underclothing loose and porous.

WHAT NOT TO DO :

1. Don't eat candy, rich pastries and cake.
2. Don't smoke.
3. Don't drink coffee, tea, ice water, and alcoholic drinks.
4. Don't eat too fast and too much.
5. Don't eat heavy meals after 6:00 P. M.
6. Don't eat meat more than once a day.
7. Don't mix too many kinds of food at the same meal.
8. Don't worry.
9. Avoid being pessimistic.
10. Don't lead a sedentary life and eat rich food.

11. Don't eat predigested food.
12. Don't eat spices and hot sauces.
13. Avoid over-eating.
14. Avoid all excitement.
15. Don't use any vinegar.
16. Don't be irregular with meals and retiring.
17. Don't eat bakers' white bread.

My main object in mind when I wrote the vitamine table of foods, was that my reader can refer to this frequently, and in this way can make a far better selection of foods for daily use that are rich in vitamins and mineral salts and very essential to life. With the same thought in mind, in regard to the table of menus, I have drawn from different sources, which are of the highest authority, giving outlines for the use of people who are engaged in different kinds of work, or leading a life of leisure; and from them, you can formulate a system of menus in the selection of foods that are especially fitted for your own personal use and benefit.

A few years ago we rarely heard much about the importance of vitamins and mineral salts in our food. But now we have learned of four vitamins, A, B, C and D, and know that they are an absolute necessity to our health and without them our bodies soon give way to the attacks of disease, premature old age and death.

Likewise, but a few years ago, many quite noted men thought the ductless glands were of little use to the human body, but now noted investigators have discovered that the ductless glands exert a powerful effect on all of the vital organs of the body.

Again other noted investigators have discovered that the accumulation of toxins and poisons in the system are powerful factors in causing auto-intoxication, disease, premature old age and death.

If we would but use proper food, observe regular laws of health, and the prompt removal of waste and ashes from the body, then we would have a good, rich blood current which would protect us against disease and insure the proper functioning of the ductless glands, and all the organs of the body.

The economic side of life is closely interwoven with our very existence, and forces itself on our daily attention. The wise use of money has much to do with our health, happiness or misery. The inheritance of much wealth is not usually a benefit, but is rather a detriment to the average young man, for it often causes dissipation and a wrecked life. The majority of parents cannot bequeath much wealth to their children, for the wealthy class form but a small per cent, but they can leave their children something far more valuable than money, in the way of an education and help to mould a good character.

I always feel so grateful to my parents for the inheritance they left me, not of money, for their circumstances were very moderate, sufficient for their comforts of life by spending the last twenty years of it with me, but I feel so grateful for the education they gave to my brother and myself at considerable sacrifice to their own personal pleasure; as my father often remarked he would leave something to me that I could not lose or squander in some bad investment, to stay with me as long as I lived.

But aside from this education, he left me other things that were fully as valuable. He taught me the importance of getting started in life properly, and the pride which we should always have in a clean, decent life, so as to retain the respect and good will of our friends and acquaintances, and besides this, he impressed on me the great fundamental principles of being of service. In doing this he had a number wise sayings. He was a great reader and had the power of remembering what he read and gathered from this extensive reading, he had considerable amount of wisdom that seemed to be boiled down.

I will mention just a few that I recall as they may be of service to some boy or girl who is starting out in life. One of the first things I was taught was "All work is honorable." Another was "All knowledge is useful." He always wanted me to read

and study and gather all the knowledge and wisdom I could in this life. Another was in regard to the use of money. He said, "We should try to gain a competence to take care of us in sickness or old age, but not to gain money with the idea of a miser, not for money itself, but for what money would do. We should try and save a part of our income, if possible twenty-five per cent or more, investing it carefully for the time of need;" and his suggestions about the spending of money always seemed to me so wise. He said, "Do not be too niggardly and don't be too extravagant. Buy the necessities and perhaps what luxuries you think you can afford, but, my son, please remember this one thought, *"It is a thousand times easier to spend money than it is to earn it."*

And one other saying of his is, *"No boy or girl will ever learn the value of a dollar until he earns it. They must learn that money does not grow on trees."* Parents can talk to their children indefinitely about the value of money, but dear parent, I would suggest that you have your child go out and earn a few dollars and I think it will be of more value than long talks and advice on this subject.

One of the most important events in our lives is when we get married. Some thoughtless young people look upon marriage very lightly and speak of it as kind of a lark, but this is a grave mistake. No two

should ever get married until they are thoroughly acquainted with each other, know each other's temperaments and know each other's dispositions thoroughly, and each must be thoroughly convinced that he is willing to make any great personal sacrifice of his own wishes and habits of life for the sake of the one he is thinking of marrying. When these conditions are met and also the economic conditions in the fact that the man has saved up a little money to make a start in life and has an assured income that is amply able to provide for a wife, then all should marry, as it is the natural state in which we are intended to live.

The discord and quarrels of married life are often the cause of great unhappiness and also *it seriously impairs the health of both the man and wife*. And most of this discord can be avoided and should be stopped. If there are any children in the family, these quarrels are very poor examples to set before them. Of all the punishments I know of that seem to follow the disregard of proper laws, the punishment following immorality is the most drastic and severe as the Good Book tells us, "Visiting the iniquity of the fathers upon the children unto the third and fourth generation."

Those who drift into an immoral life should remember this divine warning. *Any sexual excesses*

always carry with them the most terrible results. Few realize what a *tremendous power* the sexual organs have upon our health and happiness and well-being. If they are used temperately and wisely, as the Lord intended for the propagation of the human race, nothing adds more to our health, strength and happiness.

I would suggest to all fathers to talk to their sons when they are young, and mothers to talk to their daughters when they are young, telling them in plain language what it means to have a wise use of these organs which the Lord gave us and explain to them the terrible results of abuse or intemperate use of them. Self-abuse is helping to break down the health of many of our young people and helping to fill our insane asylums. Teach your children to use their will power and control their passions which were given them for a wise purpose and do not let their passions rule and ruin them.

Those young people who drift into an immoral life do not begin to realize the terrible price they must pay from venereal disease, broken health and shattered nerves. One of the greatest safeguards for young people is active, wholesome, outdoor sports. Seek only the companions who are clean and decent. Avoid all lewd, suggestive reading and movies. Do not allow the mind to dwell upon immoral, obscene

literature or thoughts, which only excite the imagination and passions, and bring on a most dangerous, morbid mental condition. Mental thoughts along these dangerous lines, nearly always precede moral mistakes and the committing of terrible crimes.

The alarming increase in Neuritis and Neuralgia impels me to speak briefly of these diseases, as they have a slow yet marked effect upon the health of the individual, and consequently upon the length of life. One author states their principal cause is *the cry of the nerves for more, and purer blood*.

Neuritis is an inflammation of the nerves. The condition is attended by pain and tenderness over the nerves. Anesthesia, disturbances of sensation, Paralysis wasting, etc. It may be caused by alcohol, diabetes, diphtheria and traumatic due to injury. But by far, the most common variety of Neuritis is called adventitial, or that which affects the sheath of a nerve.

The inflammation of this sheath, causes pressure on the nerve, accompanied by severe pain. Sometimes degeneration takes place in the nerve substance. Neuralgia is quite similar to Neuritis, but without the inflammation in the nerve, the pain is in the nerve, or radiating along the course of a nerve, and may result from a great variety of morbid conditions.

The neuralgic pain is of a severe, darting or throbbing character, and usually intermittent.

Many varieties of Neuralgia are distinguished according to the part affected, or to the cause, as bronchial, facial, diabetic, malarial, and cardiac termed Angina, Pectoris, or neuralgia of the heart.

A great many have discovered it is very difficult to cure Neuritis with medicine. The cause and location of Neuritis makes it difficult to be acted upon by medicine. Opiates can be given in severe cases, but these give only temporary relief, without any curative effect, and the steady use of opiates, is dangerous. By far, the simplest and best treatment for Neuritis, is the use of electricity. Wonderful improvements have been made in the last few years in the use of electricity, in the treatment of these diseases. My brother has spent considerable time in the study of electricity in recent years, and is using it more and more in his practice of medicine.

He tells me he is getting excellent results in the treatment of Neuritis by the use of the Sinusoidal current of galvanic electricity.

I know of some physicians who are obtaining good results in this disease, with others forms of electricity.

Other physicians are giving relief to their patients by hot applications, and hot baths and massage

treatments. While these diseases may be caused by a great variety of morbid conditions, the great outstanding fact remains, their principal cause is lack of a pure, rich blood current, and you cannot have this without proper food, proper exercise, and thorough elimination of waste. And in the final analysis the surest way to avoid these distressing diseases, is to follow the health suggestions found in this book, which is a key to a long and healthy life, free from pain.

While walking on our streets, or at any large gathering of people, if we study closely the appearance of the people we meet, we would be surprised at the lack of health manifest by so many people, today. The pale, sallow complexion, frail bodies and languid motion, show weakness, and that their health is below par. This applies with special importance to many of the children, today. But, if we would but note the food they are eating, and their habits of life, the cause could easily be seen.

As we walk down our streets, we notice the number of candy stores, with all sorts of candies displayed in the most attractive form. Under the head of Carbohydrates, I have spoken at length of the evil effects of cane sugar, which is a thief, and robs the people of the precious calcium salts, which are so essential to a healthy life, especially valuable and neces-

sary to children to promote their growth, and the formation of bones and teeth. Cane sugar forms insoluble compounds such as calcium-sucrate and calcium-carbonate, so the child's greatest loss is calcium salts and the heat and energy from the cane sugar is the second loss, and the third loss is the work thrown on the excretory organs to get rid of these insoluble compounds.

The manufacture and sale should be prohibited by law, of a considerable part of the candy on our market today. It is an abominable compound, composed largely of glucose, a small quantity of cheap cane sugar, some chemicals and unhealthy analine dyes. Many authorities claim it is doing more harm to the health of the American people today, than alcohol is.—*Its greatest injury is to our children.*

After noticing the candy stores on our streets, next notice our grocery stores. The shelves are loaded with very attractive canned goods, of all descriptions—all kinds of jellies and marmalades.

Notice the pickles; in the manufacture of which vinegar plays an important part. As we pass on down the street, note the display windows of our bakeries, filled with the most tempting display of cakes, cookies and pasteries, and even the rolls are sugar coated. These merchants are displaying the

most popular foods, that are being purchased and consumed by the American people.

These foods taken in excess, to the exclusion of good, plain food, are helping to break down the health of our people.

Next step into our meat markets and note the excessively large amount of meat being purchased, and consumed by the American people.

Nearly all these articles of food I have mentioned, which have a large sale in our retail stores, are acid forming foods, causing a condition of acidosis in many people. These foods are eaten in considerable quantities, without sufficient off-setting foods, causing more or less fermentation and derangement of the alimentary tract, and can be easily corrected by substituting plain, wholesome food, rich in vitamins and mineral salts, as shown in the vitamin table.

We should discard baker's white bread from our dietary. Its food value is not great as it has been robbed of most of the wheat's most valuable properties by the miller's bolting cloths. In its place, we should substitute whole wheat bread. The cereals give us the cheapest and best food to be had.

When I grind a pound of wheat and produce one pound of whole wheat flour, costing two cents, and this is made into a loaf of bread, *we have the best and cheapest food in the world.*

Everyone should use more Shredded Wheat Biscuits. They contain all the nourishing and life giving elements of wheat ready to be consumed.

I cannot recommend too highly the addition of Ry-Krisps Crackers to our daily menu. Like shredded wheat they are already baked and ready for use, and not at all expensive. The entire kernel of rye is ground and used in making these crackers, which are large and thin, by a firm in Minneapolis, and for sale by most grocers.

Whole wheat bread and Ry-Krisps are recommended for general use by our highest medical authorities.

A coated tongue shows this acid, fermented condition, due to eating too large quantities of food, and especially this acid forming food. This condition of acidosis with more or less fermentation and belching of gas, *should be stopped*. The drinking of two or three cups of hot water will sometimes relieve a person, other cases require a seidlitz powder to neutralize the acid condition and flush the alimentary tract. Give the stomach a thorough rest, and then use great care in eating plain, wholesome food.

If this attack of indigestion is more serious and the above simple suggestions do not relieve you, then call your physician, but after he has restored you to health, do not expect to remain well unless you reform

your diet for the dietetic sins that brought on your present condition will cause a return of your former disease and if long continued, is very liable to result in a far more serious condition.

I have spent considerable time in research before writing this book. During this time, I have had a number of valuable suggestions and quite a number of questions asked me. Not long ago, one of my patients asked me this question: "Dr. Brunson, are you foolish enough to think you can live a hundred years?" My answer was this: "Oh, no, I have no expectation of doing this. I was groping in the darkness of ignorance for too many years, and during this time I injured my stomach and other vital organs far too much to ever hope to live a hundred years. But I can assure you that in the few years' experience I have had since I discovered the proper way to live, it has already added to my number of years. And (what is still more valuable to me,) it has added much to my general health. It has also increased my efficiency and makes me enjoy my work, my meals and the very fact of living; and while I do not expect to live to the century mark, I am positive that the scientific knowledge in this book will enable many boys and girls to start right living when young, and I haven't a doubt that they will at least reach the century mark."

I have had unusual opportunity to study this subject and I feel it my duty to give this knowledge to the world, and thus help to spread the gospel of good health.

Another question from an old, retired physician was this: When he asked me if I was writing a book and I said yes, he replied: "Why, Dr. Brunson, I would not write a book for a million dollars. There is too much work about it and I think, Dr. Brunson, you will find you have undertaken a considerable task before it is completed." I often recall these words of my friend and think how full of wisdom this man was, from his long experience.

The food we eat is the most important thing in life. One author states the fact this way: "Tell me what you eat, your habits of life, exercise, etc., and elimination, and I will tell you about how long you will live, what your efficiency will be, how free you will be from pain and disease, and how much more you will get out of life." The food you eat simply spells out your physical condition while your health is one of the most important things you must guard as you pass through life. Every day that we can eat three meals, sleep well and be free from pain, is a blessing for which we ought to return thanks to the Giver of All, and nearly all of us can attain this

condition if we will follow the teachings found in this book.

The bad effects of wrong eating and living do not show themselves immediately. Sometimes it takes months and years before our health is undermined, and premature old age brought on. This is one reason why many people do not fully appreciate the importance of right living. The Lord, when he made us, in His infinite wisdom, gave us remarkable power to adapt ourselves to tolerate many conditions, some of which are contrary to our well being. In other words, nature tries to adapt herself to the habits of life and the food we eat, which are not for our own good or health. She tries to put up with the abuses and poisons that we take into the human system.

The people who use tobacco and narcotics to excess, do not die immediately, for their systems are trying to get rid of all these poisons and to adjust themselves to the unfavorable conditions and abuses, *but at the same time these unwise habits are wearing out the human machinery night and day.* We might compare it to a malicious person who pours carborundum dust into the oil can and the engineer, wholly ignorant of its condition, pours this oil into the great engine and machinery. The engine and machinery does not stop, they look all right on the outside, they continue to run, but after a time an expert mechanic

finds they do not run properly and discovers that the bearings are being worn out, and the machine is practically ruined, or at least its years of usefulness are greatly curtailed. Carrying out this same simile, you can readily see how thousands of people are pouring carborundum into the oil and food they take into their own systems, and slowly, but surely, wearing out their vital organs and bringing on disease and premature old age.

If some one whose power and authority was undisputed, should tell us that we can have but one automobile in our lifetime, how careful we would be in the caring for that automobile. At the present time if our automobile becomes worn out, or partly worn and disabled, we can sell it or trade it in and get a new one, providing we have the means or the credit to do so; but under this example, what I am now trying to impress upon my reader is, let us suppose that the automobile was to be the only one we could have during our lifetime. If we have but one automobile, how careful we would be in keeping it in good running order. We would certainly see that the cylinders were ground; that every part was kept well oiled. If any of the parts became a little loose or rattled, or if there was any knocking about our work, we would attend to it at once, because we know from experience that our automobile will be of no use to us, if any

one of its many parts become worn out or disabled so it will not perform its part of the work in the machinery of the automobile.

Now, with the human body, we are given but one body for our lifetime. The human body is far more delicate and complicated than any automobile that was ever built, and yet how careless most people are in the caring for this physical temple, which the Lord has given us for our special use; and many people will persist in disobeying the great laws of health, bringing on disease, pain and premature old age. For instance, they will continue abusing their stomachs by eating great quantities of very rich food, or in many other ways, in which they misuse this organ which is so necessary to our vital existence.

This same thought can be applied to the kidneys and other organs as well. If we persist in eating large quantities of meats, or excessive amounts of sweets and cane sugar, we may rest assured it will not be many years until the kidneys or the pancreas give way under this excessive amount of work which they are called upon to do, and then the patient will be afflicted with Bright's disease or diabetes or some other serious chronic malady from which he will never be able to see a real well day afterwards. All the blood should pass through the kidneys every 7 minutes. Remember these vital organs of the human machine

are very delicate and cannot be replaced the same as we can replace the cylinders or some other parts of the automobile that may have become worn out. Remember, if you take good care of your stomach you have entered into partnership with the other vital organs which can never be dissolved, so don't have any dispute or quarrels with your stomach, because, rest assured, it will surely have the last word; and I wish you luck for all you get out of life if you have permanently injured these vital organs, I care not how much money you have or what position you have in life.

Not great riches, but a competence for old age adds to the length of life,—removes the dread of dependency in old age.

A wise use of money has much to do with our happiness or misery in this world. If possible, at least one-fourth of our income should be saved for old age and needs that may arise from many sources.

When their automobile knocks or rattles or squeaks, most people hasten to remedy the condition, knowing full well what the results will be if they do not look after those troubles, even though the automobile continues to run. Unless these evils are corrected it will soon wear out and yet these same people who are so careful of their automobiles will continue their practice of unhealthy eating and habits of life, and when nature in its mute way tries to ac-

quaint us of our condition by headaches and other symptoms of lowered vitality and health, they are given little attention, but instead they visit the doctor or the drug store and think that drugs will bring back perfect health and life. It may temporarily stimulate wholly over-worked organs of the body, but let me warn you no permanent improvement will come until the habits of right living are adopted. *Pain is nature's great signal of distress, which should always have our immediate attention, and the wrong conditions corrected.*

Understand me; I am not opposed to medicine. We often need it, and must have it, to tide over the crisis, and to correct many of our wrong habits of living and environment, but on the other hand do not deceive yourself in the thought that a continual drugging habit will give you health, when you don't observe the correct laws of health as you will find them in this book.

PTOMAININE POISONING

Ptomaine poisoning is nearly always caused by eating nitrogenous or protein foods in which decomposition has already begun. It most often follows eating oysters, canned goods, cold storage turkeys and meats.

If treated promptly, the results are usually not serious, but if neglected, and a large amount has been taken into the system, it often causes so much fermentation and distention of the stomach that it stops the heart beating. The surest and best treatment is an immediate emetic. I consider common, fresh mustard the most simple, safe and quick emetic I know of. One teaspoon of fresh mustard, stirred in a pint bowl of tepid water and drunk quickly will cause an emetic result inside of two or three minutes. If the mustard is not fresh, and has been exposed to the air and partly lost its strength, a second dose can be taken within five or ten minutes with perfect safety. This remedy should be applied at the first symptoms, sick stomach, and general pain and depression. If the stomach is emptied early in the attack, the emetic may be followed by drinking plenty of hot water, followed by a mild laxative.

If ptomaine poison is not immediately removed, it passes through the entire thirty feet of the alimentary tract and more or less of the poisons are absorbed causing a great deal of physical depression, increasing the danger of the attack and lengthening the time of recovery, which often requires weeks.

On one of my trips to California a number of years ago, I saved a young lady's life, on the Golden

State Limited train on the Rock Island R. R., by having some of this mustard with me and by giving her some stimulants afterwards. She had eaten oysters at Colorado Springs just before entering our train and was very ill. With this treatment, she soon recovered, but without it, it is quite likely she would have died before morning, as she had a very severe attack. I never travel without having a small quantity of fresh mustard, in the original box, which has not been opened and exposed to the air. It should be kept in every household. It may be found of great value in any emergency case in which a child, for instance, has accidentally swallowed some poison and an immediate emetic effect is desired, avoiding the danger of serious delay until a physician can arrive. Give this emetic and if the case is serious, call your physician immediately and he will give whatever other treatment is needed.

Ptomaine poisoning was the cause of the death of President Harding. Tainted crab meat was the cause of his illness, which soon ended in death. Crabs are the turkey buzzards of the sea, and their principal food is dead fish. Crabs are so thoroughly infected with filthy germs, it is almost impossible to disinfect them, and no one well versed in dietetics would think of eating them. President Harding was most carefully protected from crazed fanatics day and night,

but there seemed to be no one who thoroughly understood foods, to warn and protect him against a far more dangerous enemy—a dead crab. Who is responsible, that a whole nation should mourn the loss of such a beloved President?

The most prevalent illness in the United States is the common cold. Remarkable as it may seem, the widespread familiarity with this condition has bred a contempt which hides its seriousness, yet when the sum total of the ravages committed by common colds is made, it becomes evident that instead of being a group of trivial affections common colds must be classed as serious diseases, as they often lead to Pneumonia, Tuberculosis and many other serious and dangerous diseases.

The causes of colds are multiform and not entirely understood. In every case, however, they are dependent upon the growth and activity of living germs which are always received from other people. In other words, colds are infectious.

Undue exposure and fatigue lower the vitality of the body, and invite the attack of these germs.

Common colds occur in epidemics and are distinctly contagious. They sweep through an entire household, an entire city, an entire state, attacking the young, the adolescent, the middle aged, and fre-

quently carrying off the aged, the weak, and the debilitated.

To prevent colds, the body must be kept at a *high point of efficiency*. Good, wholesome food, in proper amounts, plenty of sleep, careful avoidance of all body wastes, regular exercise in the open air, keeping the body, nose and mouth clean, avoiding poorly ventilated rooms and sudden changes of temperature, chilling the body by either cold or wet; in other words, following the laws of health found in this book.

When a person is attacked by a cold which is at all serious, he should call his family physician, go to bed and stay there till all acute symptoms subside.

In order to keep the mind in a normal condition and to prevent worry, the following forcible quotations may be of service to my reader :

“Yesterday is gone forever, forget it.”

“Tomorrow never comes; don't worry.”

“Today is here, use it.”

Deep religious faith has a powerful influence in lengthening life. I cannot find a better example of God's sustaining power than the Rev. Seth Reed, of Flint, Michigan. Mark how erect he walks, yet think what hardships and work he has experienced and the amount of good he has done in spreading the gospel of Jesus.

We look upon this unnecessary shortening and

waste of life complacently because we are used to it and consequently think that it is natural. It is neither necessary nor natural. If we would read and heed nature's warnings it would cease. Then people would live until their time came to fade away peacefully and beautifully, as do the golden leaves of autumn, or the blades of grass.

In Dr. Alsaker's book entitled "Maintaining Health," he writes at length on old age and says: "Many dread old age because they think of it in connection with decrepitude, helplessness, and the childish querulousness popularly associated with advancing years. This is not natural old age, it is a disease. Natural old age is sweet, tolerant and cheerful. There are few things in life more precious than the memory of parents and grandparents grown old gracefully after having weathered the storms of appetites and passions, the mind firmly enthroned and filled with the calm toleration and wisdom that come with the passing years of a well spent life. Old age today brings to mind a picture of decrepitude and decay. This is because there is practically no natural old age. Those who live so that they are unhealthy during the early years of life will not be well if they reach advanced years. Old people can be well in body and sound in mind. In order to attain this desirable end, it is necessary to live properly during the first part of

life. It is true that people may dissipate and reform, and then live long in comfort, but usually those who spend too lavishly destroy their capital and go into physical or mental bankruptcy.

There are many who, during their prime, say that they do not wish to grow old. Their desire for a short life can easily be satisfied. All that is necessary is to live in the conventional manner, and the chance of dying before reaching the age of fifty or sixty is good. A few live to be seventy or more in spite of dissipation, but these are exceptions. They are endowed with excellent constitutions to begin with, constitutions that were made to last over one hundred years. Where we find one who has lived long in spite of intemperance, thousands have died from it. Physical and mental well-being are necessary to attain one's life's expectancy. Old age should not be considered as apart from the rest of life. It is but one of the natural phases. Those who do not live to be old, have failed to live completely. Old age is a desirable condition. The physical tempests have been subdued, if the life has been well spent."

A proper state of mind or serenity of spirit in the last pages, is the spirit with which we should approach the closing chapters of life, as I have tried to make the closing chapters of my book.

We must remember that death is inevitable. It

is a part of God's Great Plan. It is the bringing on of premature old age and death, that I am striving to combat. The reckless, prodigal waste and destruction of vital organs in this great human machine, the Lord has given us, is what I wish to emphasize and call to my reader's attention. The great underlying purpose of my spending so much time and energy in writing this book, is to get our boys and girls started right, so as to keep this human temple, the only one that we have in this world, in perfect condition. So that they can be of great service and enjoy life and be free from pain, instead of being semi-invalids, with pain and disease, dragging out a miserable existence, not only a burden to themselves, but to their friends. To prevent life being not worth living, even before they have reached what should be middle life.

The right way to look at death and the hereafter is graphically portrayed in the following beautiful figure of speech:

“Old age is the outer shore against which dashes the sea of Eternity. This sea is calm or tempestuous as we view it. If we look hard down the cliff of death, we are shocked at the waves and force of collision, but if we look far out on the Sea of Eternity, all is calm and tranquil.”

President McKinley was a great man, but he never rose to loftier heights than when on his death bed,

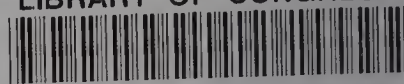
shot down by a crazed fanatic, leaving an invalid wife and the highest office the American people can give to any man, he said, "Thy will, not mine be done."

Don't simply be good, "be good for something." If we want to live right, we must get away from our selfishness and try to be of service in our home community.

Charity is not all in giving money. Many hearts are weary and over-burdened. They need your sympathy and advice. My father said that the day was not satisfactory to him unless, at night, he could remember some kind words spoken and deeds performed during the day. We get from this world largely what we bring into it. If we are selfish and cruel, the same spirit is aroused in those we meet. If we are kind, cheerful and generous, the same spirit comes back.

What can be a sadder sight than when the sands of life are slipping to ashes, and the shadows begin to lengthen and we catch a glimpse of the sunset glow, to find, when too late, that life is a failure. Nothing but selfishness, and we die, unwept and unsung. When we learn that, "It is more blessed to give than to receive," then our lives will be richer, better and sweeter, and we shall live much longer,—even unto "a hundred years."

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